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The Newspaper of the Industry

Air Conditioning & REFRIGERATION NEWS

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879.
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'Written To Be Read on Arrival'

Issued Every Wednesday at Detroit, Michigan

MARCH 16, 1942

Vol. 35, No. 11, Serial No. 678
Established 1926.

PUBLIC LIBRARY MAR 18 1942

Store, Restaurant Refrigeration Repairs Get A-10 . . .

WPB Has New Branch Lineup For Industries

Commercial Refrigeration Gets Autonomy Under New Reorganization

WASHINGTON, D. C.—In a move to effect "the maximum use of existing industrial capacity for production of war material and products for essential civilian use," the War Production Board last week announced reorganization of its Bureau of Industry Branches and the establishment of 24 industry branches.

As previously reported by the NEWS, air conditioning and commercial refrigeration has been made a separate branch under the new setup, with J. M. Fernald, formerly general manager of Baker Ice Machine Co., as chief.

Consumers durable goods branch, which includes household refrigerators and other appliances, is headed by L. C. Upton, president of Nineteen Hundred Corp., washer manufacturer, of Binghampton, N. Y.

The bureau is headed by Philip D. Reed, board chairman of General Electric Co., with Amory Houghton, board chairman of Corning Glass Works, as deputy bureau chief; and J. R. Kimberly of Kimberly Clark Corp., and J. R. Taylor of Socony-Vacuum Oil Co. as assistant chiefs.

Special assistants are W. B. Murphy, Campbell Soup Co.; N. G. Symonds, Westinghouse Electric & Mfg. Co.; and Ben Alexander, Masonite Corp. Marshall J. Dodge of J. W. Davis & Co. is executive assistant to Mr. Reed.

Main task of each branch chief will be "to bring about maximum use of existing industrial capacity within the industry assigned to him for the production of war material and products for essential civilian use." He will assist the industry assigned to him "in every phase of its production program," including conversion, financing of new or expanded facilities, problems of labor supply, and procurement of materials and equipment.

(Concluded on Page 4, Column 1)

Toronto Conference of Service Contractors To Cover War Problems

TORONTO, Ontario, Canada—Problems of the refrigeration industry which have been generated by the War situation will be given a prominent place in the program of the Annual Conference sponsored by the Ontario Maple Leaf Chapter of the Refrigeration Service Engineers Society Sunday and Monday, March 15 and 16, at the King Edward hotel in Toronto.

Past conferences under this sponsorship have been well attended by members of the refrigeration industry in Canada, American manufacturing executives and representatives, and some service men and installation contractors from the border cities of the U. S.

The Sunday and Monday dates for the conference are expected to make possible attendance by those who might find it difficult to get away during the middle of the week because of the extra demands made

(Concluded on Page 13, Column 3)

BULLETIN!

Return Methyl Cylinders!

Although production of methyl chloride is adequate, deliveries of this needed refrigerant will be slowed up considerably unless every cylinder is returned promptly to manufacturer.

Ansul Chemical Co., which for some time has been advertising: "Keep Every Cylinder At Work," reports that in too many cases laggards are impeding the flow of methyl chloride from manufacturer to user by taking their time on cylinder returns.

Protect yourself from refrigerant shortages. RETURN ALL CYLINDERS.

Sales of Copper Tubing Need an A-10 Priority

CHICAGO—A written ruling obtained by the National Refrigeration Supply Jobbers Association from the Copper Products branch of the WPB declares that dehydrated copper tube is a brass mill product as defined under Order M-9-a as amended and that jobbers thus can sell tubing only

(Concluded on Page 4, Column 2)

Tighter Curb Is Placed on Time Sales Contracts

WASHINGTON, D. C.—New restrictions on instalment buying were imposed last week by the board of governors of the Federal Reserve System, in an anti-inflation measure designed to neutralize the government's unprecedented war expenditures.

The new restrictions, announced in the form of an amendment (No. 3) to those issued by the Federal Reserve last summer, include the following four major changes:

Standard maturity for instalment credits will be reduced from 18 to 15 months, except for accounts applying to residential modernization, plumbing, furnaces, water heaters, water pumps, and pianos, all of which will still enjoy the 18-month limit.

Down payments are increased from 20 to 33⅓% on purchases of refrigerators, washing machines, ironers, vacuum cleaners, electric dishwashers, room unit air conditioners, radios, phonographs, and musical instruments.

For home air conditioning systems and attic ventilating fans, the down payments will be raised from 15 to 33⅓%, and on furnaces, water heaters, water pumps, and plumbing, from 15 to 20%.

Added to the list of articles requiring 33⅓% down payment will be bicycles, lawnmowers, silverware,

(Concluded on Page 13, Column 1)

Men in WPB Who Deal With Refrigeration

HENRY W. DINEGAR
Now in the Division of Civilian Supply of the WPB, he specializes in refrigeration and other major appliances.

STERLING SMITH
An official of the newly formed Air Conditioning and Commercial Refrigeration Branch of WPB.

W. S. HAMMERSLEY
As chief of the refrigeration section of the Consumers Durable Goods Branch of the WPB he heads up activities which affect household refrigerator industry.

ROD TAIT
An official of the newly formed Air Conditioning and Commercial Refrigeration Branch of the WPB. Both Mr. Tait and Mr. Sterling Smith were transferred from the former refrigeration section of the Consumers Durable Goods branch.

Priority Rating Granted In an Amendment To Order P-100

Henderson Wants Refrigerator Prices As of Feb. 2 Level

WASHINGTON, D. C.—A peremptory request that wholesale and retail domestic mechanical refrigerator prices be restored immediately to the level of Feb. 2 was made last weekend by Price Administrator Leon Henderson in a telegram directed at distributors, dealers, and retail outlets.

The telegram charged that "inflationary and unfair" price increases had occurred on a nation-wide scale since the War Production Board froze refrigerator stocks on Feb. 14.

Pointing out that maximum prices which manufacturers can charge for domestic refrigerators were established by OPA on Feb. 2, Mr. Henderson's message said:

"I am requesting the immediate withdrawal of any retail or wholesale increases on domestic mechanical refrigerators which have been made since Feb. 2, the immediate reestablishment of wholesale prices in effect on Feb. 2, and the withdrawal of any retail prices which are above the suggested retail prices shown on manufacturers' price lists."

Private brand refrigerator prices, the administrator stated, also should be brought back to the Feb. 2 level.

The telegram was sent to refrigerator manufacturers, mail-order houses, volume distributors, and trade associations for dissemination to all wholesale and retail outlets. Those receiving the telegram were asked to air-mail to OPA copies of their communications to distributors, dealers, and retail outlets, informing them of "this urgent request."

Simple Endorsement on Purchase Orders Is Way To Extend It

WASHINGTON, D. C.—The long-awaited A-10 rating for repair of refrigeration equipment in stores and restaurants has been granted by the War Production Board, in an amendment to Preference Rating Order P-100.

"Priority assistance for the maintenance of refrigerating equipment in stores and restaurants has been granted by Amendment No. 2 to Preference Rating Order P-100, issued March 9 by the Director of Industry Operations," declares the official WPB release.

"Under the terms of Order P-100," the release continues, "a preference rating of A-10 is assigned to materials for repair and maintenance of equipment for specified industries and operations. Today's amendment includes the maintenance of refrigerating equipment in stores and restaurants among the uses for which this preference rating may be assigned."

It is expected that "stores and restaurants" will be interpreted

For those who will use this preference rating, a re-reading of P-100 is recommended. See pages 4 & 5 of this issue.

broadly enough to include almost any kind of a commercial refrigeration application.

Nothing was said in the official release about repairs for household refrigerators.

Amendment No. 2 to Order P-100 is a singular triumph for those who have battled for a repair parts priority for the refrigeration field, since P-100 formerly specifically barred any priority assistance for repairs to retail establishments, confining its benefits to producers and wholesalers.

The priority under P-100 is easy to apply, an endorsement on the face of the order by the man applying for the rating being sufficient.

Following is the official text of the amendment:

TITLE 32—NATIONAL DEFENSE
CHAPTER IX—WAR PRODUCTION BOARD
Subchapter B—DIVISION OF INDUSTRY OPERATIONS
Part 958—REPAIRS, MAINTENANCE, AND OPERATING SUPPLIES
AMENDMENT NO. 2 TO PREFERENCE RATING ORDER NO. P-100 AS AMENDED

(a) Section 958.2 (Paragraph (b) (1) (iii) of Preference Rating Order P-100) is hereby amended to read as follows:

(iii) Any person located in the United States, its territories, and

(Concluded on Page 20, Column 3)

Radio Manufacture For Civilian Use To End After April 22

WASHINGTON, D. C.—Manufacture of radios and phonographs for civilian use is to be discontinued after April 22, 1942, the War Production Board has ordered.

The plants may complete sets on which they begin assembly work on or before April 22, 1942, under the limited production quotas provided for in the original order (L-44). They may also continue to make replacement parts.

Other than that the entire facilities of the American radio industry will be made available for war production.

The order stipulates that no manufacturer shall use more than $500 worth of parts and materials ordered after Feb. 11, 1942. However, it does not impose any limitation on the purchase of wooden cabinets. The $500 ceiling on orders is to permit the purchase of a limited quantity of incidental items to complete production by April 22.

The order (L-44-a) affects 55 companies manufacturing home receiving sets who in 1941 employed approximately 30,000 persons, produced more than 13,000,000 sets, and did a business of approximately $240,000,000.

(Concluded on Page 20, Column 3)

One-Year Warranty on G-E Water Coolers

BRIDGEPORT, Conn.—All General Electric water coolers are being sold now with only a one-year warranty, according to an announcement made recently by Charles M. Rowland, manager of the cooling equipment sales of the air conditioning and commercial refrigeration department.

Affected by this policy are the BT and RT models as they have previously been sold with a four-year replacement plan.

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Appointments & Promotions

Tom Dunne Is Buyer For Simpson, Toronto

TORONTO, Canada—The Robert Simpson Co. department store here has announced the appointment of Thomas Dunne as major appliance buyer. He replaces James Jackson, who has been appointed regional officer of the Wartime Prices and Trade Board. Mr. Dunne plans to add additional merchandise lines to make up for appliance shortages.

S. M. Manley To Manage Michaels & Co. Chain

BROOKLYN—Sidney M. Manley has been named general manager and buyer for Michaels & Co., operator of a chain of appliance and furniture stores here and in Jamaica, N. Y., replacing the late Max Goldberg. Mr. Manley was formerly with Ludwig Baumann & Co.

Gettstein & Cetera New Ludwig Baumann Buyers

BROOKLYN — Appointment of John Cetera as buyer of radios and floor coverings and Morris Gettstein as buyer of major home appliances and home furnishings of the C. Ludwig Baumann Co. here has been announced by C. Ludwig Baumann.

Shilling New Manager Of Penn Moline Branch

MOLINE, Ill.—Howard C. Shilling has been appointed manager of Penn Electric Switch Co.'s branch office here to replace J. G. Moravec, who has been called to active military service. Mr. Shilling formerly was a Penn representative in the Chicago territory.

Mr. Moravec, now a first lieutenant with the Army Corps of Engineers, had been manager of the Moline office since 1937.

Dallas and Ft. Worth Jobbing Firms Split

DALLAS, Tex.—Severence of the association of Gulf Supply Co. of this city and L.S. Supply Co. of Fort Worth has been announced. Gulf Supply Co. is headed by J. R. Sparkman, and L.S. Co. by Howard Lee, who purchased the Sparkman interest in the Forth Worth organization. Both firms are wholesalers of refrigeration equipment and supplies.

Crapeau Is Assistant Airtemp Service Mgr.

DAYTON, Ohio—Kenneth L. Crapeau, formerly Chrysler Airtemp service representative in the Detroit area, has been promoted to the position of assistant manager of the service and parts department here, reports Earl Haefner, Airtemp service manager.

Mr. Crapeau takes over the duties of Earl Dow, who has been transferred to the sales department. His work will consist of assisting in the general operation of the department, and in supervision of the service field force. He has been associated with the Airtemp service department since 1937, having been a service representative in Chicago prior to coming to Detroit.

A graduate of Purdue university, Mr. Crapeau for 10 years was with the Insull utility organization, and for an additional five years was engaged in the operation of two gas plants in Panama for Electric Bond & Share Co.

Distributor-Dealer Doings

Donald Duck In 'Hot Water' Again Wins Top Prizes For Electric Heater Displays

• • •

Gulf States Utilities Co., Beaumont, Tex., won the Modern Kitchen Bureau's fall, 1941, electric water heater window display contest, it was announced recently. Brice L. Pettie submitted the display, and received the first prize of $100.

The Electric Power Board of Chattanooga, Tenn., took second prize, the cash award of $50 going to C. B. Osborne. Ten other companies received third prizes.

Mr. Pettie's display employed three small shadow boxes, each with animated characters who emphasized one particular advantage of electric water heating. Donald Duck, MKB's popular figure, appeared in the center of the display. A continuous stream of hot water appeared to pour from two large faucets.

Colors used were royal and turquoise blue, white, orange, and black.

The companies receiving third prizes, and the men who entered the displays, are:

The Connecticut Light & Power Co., Niantic, Conn., J. T. Sherlock; Georgia Power Co., Atlanta, R. D. Benson; Indianapolis Power & Light Co., Indianapolis, James A. Carvin; Minnesota Power & Light Co., Duluth, Minn., R. E. Anderson; Ohio Edison Co., Springfield, Ohio, Alexander J. Plewes; The Ohio Power Co., Tiffin, Ohio, D. N. Merrell; Public Service Co. of Colorado, Denver, C. F. Warmoll; Southern Colorado Power Co., Pueblo, Colo., E. C. Alexander; Wisconsin Electric Power Co., Milwaukee, Robert F. Miller; Wisconsin Public Service Corp., Green Bay, Wis., D. Remington.

The Portsmouth, Ohio, district of The Ohio Power Co. won first prize in the Kitchen Bureau's fall, 1941, water heater floor display contest. R. W. Moore entered the display in the contest, and received the cash award of $100.

Hartford Electric Light Co., Hartford, Conn., won second prize, with the cash award of $50 going to Ernest I. Roth.

Mr. Moore's display featured Donald Duck and his three nephews, popular Bureau characters, in action poses, with the message, "When Low Cost Luxury Is Your Goal, Go Electric!" The safety, cleanliness, and convenience of electric water heating were pointed out in brightly colored hand lettering. An actual size water heater was used.

Mr. Roth's second prize winning display created the illusion of a perpetual stream of hot water flowing from a giant size faucet, with the message, "An endless supply of hot water to all faucets." The internal workings of an electric water heater were shown, to dramatize its simple operation. A smaller card told the passerby: "Hot Water by Wire—3 cents per day per person!"

Dealer's Good 'Dish Night' Idea No Longer Needed

MEMPHIS, Tenn.—"Dish night" is a thing of the past, at least as far as the Memphis Appliance Co., owned by P. S. Barnes, is concerned.

Mr. Barnes, who sold 233 refrigerators in 1941, firmly believes in premiums as a means of creating new customers. For the past four years he has offered a 32-piece set of dinnerware china to each woman who turned in the name of a friend who could be sold a new range, refrigerator, water heater, or other appliance within the next 30 days.

A display card along with a complete display of china in the store window described the entire plan, resulting in from three to ten responses daily.

But successful as the premium plan proved to be, it is no more.

"We discontinued it because it is no longer necessary to buy prospects," Mr. Barnes explained. "Actually a woman is doing her friend a favor to tell her where an appliance can be purchased under the present conditions. We can scarcely handle the business coming in from entirely unsolicited customers."

The dinner sets cost the company approximately $5 a set, the store and salesmen dividing the cost equally. Last year the store gave away 200 sets of china, spending a total of $1,00 to sell an exceedingly large number of new appliances.

Woman Opens New Store In Burlingame, Calif,

BURLINGAME, Calif.—A new appliance dealership here is the Modern Appliance Store, opened recently by Jeanne Wallace, home economist. The store is located at 111 Ellsworth St. and will feature a model kitchen for promotion of appliances and kitchen equipment.

Colvin Heads Columbia Store In New Quarters

COLUMBIA, S. C.—The Electric Appliance & Service Co. is now featuring servicing, General Electric refrigerators, and other appliances in its new quarters at 1419 Taylor St., announced M. S. Colvin, recently appointed manager after seven years of service. In addition to providing larger floor space, the new location offers adequate parking facilities for customers.

W. B. Gouger and Harold Newham are in charge of servicing. Of the 12 employes comprising the store's staff, five make up the sales force: A. G. Montjoy, A. E. Stroman, Clay S. Williamson, T. B. Williams, and Myra Howell. Leila Smoak heads bookkeeping and credit work.

Lamson Adds To Display To Get Service Prospects

TOLEDO—As part of its move to swing appliance department emphasis over from sales to servicing, Lamson department store here has increased the size of its department by one-fourth, given it an up-front location on the fifth floor, and put twice as many models on display as in the past.

In showing new equipment to prospects, salesmen are pointing out that these may be the last which will be available for some time, and are gathering complete information regarding the prospect's present appliances, for later follow-up use for service business. Service selling will be concentrated on the lines the company sells.

Craft Buys Lester Sales Co.

NEW YORK CITY—Harold J. Craft has purchased the Lester Sales Co., Inc., at 147 West 42nd St.

How War Needs Affect More Than A Million Families Who Have Bought Hotpoint Electric Ranges

WINNING THE WAR is the first job of every American. And that means going without some of the things we've all taken for granted. The engineers and production experts who made more than 1,000,000 Hotpoint Electric Ranges are busy supplying Hotpoint equipment to hundreds of Army and Navy posts, as well as to cafeterias in war industry plants. While the war lasts, only a limited number of new electric ranges will be available for home use, thus releasing tons of vitally needed materials for war production.

TO EVERY family who has bought a Hotpoint Electric Range, we say—you have a durable cooking appliance. If yours is a modern Hotpoint with long-life Calrod cooking units, it should, with reasonable care, far outlast the "duration". Tests show that Calrod units are built with such durability they last for an average of fifteen years under normal kitchen use. If you *should* need replacements, they will be available.

REMEMBER, too, that the proper care of your range will help you conserve food and preserve healthful minerals and vitamins. By correct use of Hotpoint's Measured Heat, you can get the most out of your range and cooperate with Uncle Sam's nutrition and conservation programs. Unnecessary use of high heat wastes current. Study the instructions that came with your range for further suggestions about conserving food and electricity. Or write us for a free, informative booklet on this subject. Hotpoint is always glad to help you in your all-out effort to keep the American family happy, healthy and well-fed. Edison General Electric Appliance Co., Inc., 5681 W. Taylor St., Chicago, Ill.

It's easy for users of all Hotpoint Electric Appliances to keep them in proper condition during the war emergency. Repair and replacement parts are available throughout the country if required.

Hotpoint

ELECTRIC RANGES, REFRIGERATORS, WATER HEATERS, WASHERS, IRONERS, DISHWASHERS, DISPOSALLS, ELECTRASINKS, STEEL KITCHEN CABINETS

THIS IS the first of a series of Hotpoint advertisements in Weekly magazines, Women's publications and Home periodicals. While this is addressed to more than a million users of Hotpoint Electric Ranges, it carries an important reminder to the millions of other families who will become buyers of Hotpoint Electric Appliances when they are again available. Edison General Electric Appliance Co., Inc., 5632 W. Taylor St., Chicago.

New Orleans Utility Men Canvass To Aid Dealer Service Sales

NEW ORLEANS—In an attempt to create a flow of appliance repair business here to replenish partially the loss from lack of new appliances, New Orleans Public Service, Inc. has designed a plan that has tripled the city's recent repair work. A crew of 24 representatives call upon housewives to stir up latent repair business.

A printed list of Certified Electrical Appliance Repair Shops, a group of responsible dealers recognized by the utility, is shown to the housewife in order that she may select whatever shop she wishes to do the repair work. Small appliances to be repaired are picked up and taken to the dealer, the customer being given a receipt.

If larger appliances require repairs, the utility representative sends the service man himself, relaying the call through the company selected by the housewife where it is recorded.

The service representatives plan to visit 10,000 homes in this way during the next few months.

Mills Employes Win 'Minute Man' Flag

CHICAGO—The third presentation in the country of the Treasury Department's new Minute Man Flag took place March 6 at Mills Novelty Co. factory here as a result of Mills' 2,050 employes buying $250,000 worth of Defense Bonds and over 90% subscribing to the payroll allotment plan.

Harford Powel of the Washington Defense Savings staff presented the flag to Fred Mills, president of the company, at the festive ceremony. Specially made for this occasion, the flag is scaled in the largest standard size, 5 x 10 feet, with field of navy blue on which is superimposed a life-sized Minute Man with musket and plow silhouetted in white, while the 13 white stars of the original colonies encircle the figure.

Prominent officials of the Treasury, Army, and Navy, band leaders, and radio and movie stars attended the affair, at which movies and other entertainment were featured.

The other two industries to receive this honor were Chrysler Corp. and Great Lakes Steel Corp. of Detroit.

OPA Soon To Fix Prices On Heating Units

WASHINGTON, D. C.—Office of Price Administration is now conducting investigations preparatory to setting price ceilings to cover plumbing fixtures, cast iron boilers, and radiators. Questionnaires are being sent to members of the industries to secure cost information which will be used to determine the price limits.

This investigation and subsequent price control was predicted by Price Administrator Leon Henderson at recent meetings with manufacturers, wholesalers, and jobbers of these products. At this time Mr. Henderson indicated that proposed increases would have a chaotic effect upon the building industry and warned of OPA action unless prices stayed within reason. Increases as high as 15% have been quoted on some items.

Decisions relative to price ceilings are expected within 30 days, the OPA says.

Servel First Quarter Profit $194,595

EVANSVILLE, Ind.—Servel, Inc. for the quarter to Jan. 31, 1942 reports net profit of $194,595, after deducting $300,000 special reserve set up in connection with the transition of business from peacetime to war products. This is equal to 11 cents each on 1,731,426 shares, and compares with $269,703, or 15 cents each on 1,781,426 shares, for the January quarter of last year. In January the company reacquired 50,000 shares of stock, the report states.

'Water Roof' To Assist In Air Cooling Helps Against Fire Bombs

ORANGE, N. J.—A "water roof" 3 inches thick is an unusual feature of the new windowless factory building now under construction here for Monroe Calculating Machine Co. The new building, which will add 105,000 sq. ft. to the company's existing manufacturing space, will be entirely devoted to defense work.

Being windowless, the building will be served by a year-around air conditioning system, and the "water roof," a 3-inch layer of moving water provided from driven wells, is designed to assist the conditioning plant by establishing cooler temperatures in summer and additional insulation in winter, since even in the coldest weather the roof cannot go below 32° F.

This feature, engineers assert, also has unusual possibilities in case of incendiary bombs.

Early Interest Shown In Cooling Equipment In '42, Dealer Says

KANSAS CITY, Mo. — Sub-zero weather doesn't prevent prospective customers of air conditioning equipment from inquiring about purchases —especially when the spring rush promises a shortage of units, it was discovered early this year by several refrigeration sales and service firms in the Missouri Valley area.

"These prospects aren't just curious. They want to buy right now," declared G. T. Rostock, manager of the Blue Flash Refrigeration Sales & Service Co. here. "They don't seem fussy about names of manufacturers or if the equipment is new or used, a surprising number preferring the latter."

The same dealers also reported that they expect an early year demand for used refrigerators. Stocks of used units, which have undergone renewing operations this winter, are large with a general 10% raise in price being asked.

Orders on Auto Steels Need High Priority

WASHINGTON, D. C.—Automobile and automobile body manufacturers have been advised by telegram by the Director of Industry Operations not to make shipments from their steel stocks except on orders bearing high preference ratings.

Alloy steel remaining in inventories of the automobile companies as a result of the cessation of automobile production may be sold only on orders bearing a preference rating of A-1-k or higher. All other steel and steel products may be sold only on orders with a rating of A-3 or higher.

Shipments may be made on orders bearing the required ratings without special authorization from the War Production Board, but a duplicate copy of each order or letter signed by the customer and certifying material and quantity ordered and preference rating applicable must be forwarded to the Distressed Stock Unit, Iron and Steel Branch, War Production Board, Washington, D. C.

Dayton Net $710,291 In Last Fiscal Year

DAYTON, Ohio—Dayton Rubber Mfg. Co. for the year ended Oct. 31 reports net income of $710,291, equal after preferred dividend requirements to $3.50 each on the 176,671 common shares outstanding, compared with $518,897, or $2.41 a common share, in the previous fiscal year. Net sales of the company were $11,748,728, against $8,334,054 the year previous.

Special Cabinets Keep Whitman Candies Fresh

BALTIMORE — Specially designed refrigerators are being widely used in drug stores here to keep Whitman candies fresh longer. These new refrigerators have been installed in Smith's Pharmacy, Charles & Biddle Sts.; Rossberg's Pharmacy, Frederick & Hilton Sts.; and the Ambassador Pharmacy.

KEEP THAT CYLINDER ON THE JOB!

...How you can help avoid a shortage of "Freon-12"

"FREON-12" cannot be contained in paper bags, glass jars, or fiber board containers. The Interstate Commerce Commission has provided for many years that refrigerant gases must be shipped in pressure cylinders complying with certain specifications.

These cylinders are manufactured by only three companies, whose output is limited. Beyond that, there is a shortage of steel for the war program.

There is no shortage of "Freon-12" at this time, and there is a good chance that there will be no further shortage of the refrigerant itself, owing to the stepping up in capacity of Kinetic's plant and the satisfactory raw material situation.

But there is a serious shortage of steel pressure cylinders which can only be relieved by your returning the empty cylinders you and your customers have on hand.

1. Jobbers and retailers should call up every customer and keep after him until he returns the empties.

2. Servicemen should advise owners of air conditioning machines that now is the time to service these machines and make up any refrigerant losses. This can be done right now because WPB has released during March all the "Freon-12" immediately necessary for servicing air conditioning equipment. Do this job now, and return the empty cylinders.

When you return empty cylinders you get money for them, and this helps finance more work. By returning them now, you are helping to prevent a shortage of "Freon-12."

Kinetic Chemicals, Inc., has never obligated itself to take back empty cylinders that are out of its plant over 90 days, except those cylinders shipped abroad by Kinetic. Kinetic will take these cylinders back now, but reserves the right to refuse them if you hold them too long.

Won't you for your own self-interest, the interest of your neighbors, and for patriotic reasons, return empties which are needed in the war program? If you will use extra effort in hunting up empties, you will have contributed much toward the war effort.

Do your part to avoid a shortage at the points where "Freon-12" is needed. Make a serious and concentrated drive now to return "Freon-12" cylinders.

**"Freon" is Kinetic's registered trade mark for its fluorine refrigerants*

KINETIC

FREON

REG. U. S. PAT. OFF.

safe refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

WPB Branch Chief Has Wide Powers Under New Setup

(Concluded from Page 1, Column 1)

The branch chief will serve as the focal point for all War Production Board business of the industry assigned to him, and will be "the official point of contact between the WPB and all committees or subcommittees" of such industry; and he will provide the point of contact with industry for the Division of Civilian Supply in connection with its estimates of minimum civilian requirements and recommendations of programs for the allocation of products among competing civilian demands.

Another responsibility of the branch chief will be to ascertain, with the assistance of representatives of the Statistics Division assigned to him, the military requirements of the Army, Navy, and the United Nations, and the civilian requirements which are to be satisfied through the facilities available in his industry. He also will be charged with ascertaining the industrial capacity of his industry which can be made available for war production, and the opportunities for enlarging the productive capacities of existing plants for both war purposes and essential civilian use.

The branch chief also will work with representatives of the Production Division and the Purchases Division, to assure prompt placement of war contracts and subcontracts so as to make widest possible use of his industry's facilities. With the assistance of the Priority Specialist, he will devise such priorities, allocation, of limitation orders as may be necessary.

Working with the representative of the Bureau of Industrial Conservation, the branch chief will strive to effect conservation of critical materials used by the industry in making military or civilian products, or in plant or other construction projects, by substitution, re-design, review of specifications, or otherwise.

Representatives from other divisions and bureaus of the WPB assigned to Mr. Reed's staff include: Labor Division, Richard A. Lester; Purchases Division, Houlder Hudgins; Statistics Division, Virgil Reed; Bureau of Industrial Conservation, A. W. Carpenter; Bureau of Priorities, Joseph Tucker; Executive Office of the Division of Industry Operations, Eric Kohler.

Official States Tubing Sales Need an A-10

(Concluded from Page 1, Column 2)

on orders bearing a preference rating of A-10 or higher.

In a letter addressed to C. E. Borden, N.R.S.J.A. president, J. C. Von Daacke, consultant in the copper productions section, stated:

"Dehydrated copper tube, though in a finished form, is a brass mill. product as defined in Order M-9-a, and wholesalers who qualify in whole or in part under the definition of wholesalers under Order M-9-a can sell this product only on orders bearing a preference rating of A-10 or higher. The stocks in the hands of jobbers who qualify are frozen, except on orders bearing ratings of A-10 or higher.

"It is recognized that anything as essential as food preservation must be maintained, especially where food is preserved in large quantities, such as retail meat markets, etc., and larger institutions. However, it is also recommended that in most instances there are substitutes in other materials, such as steel, more available than is copper, although use of such substitutes may involve less life, more repairs, etc. Where there is no possible substitute, we feel that copper must be used. However, it can be used only on individual appeal.

"Suggest that the members of your association appeal by letters to use their stocks to balance equipment, etc., or to make repairs to store equipment. This appeal can be in the form of a letter addressed to the Copper Branch, WPB, Reference M-9-a, and each appeal should give in detail the inventory of copper, what other equipment is involved, what percentage of that quantity is used for repairs and maintenance of existing equipment, what quantity is required for installation of new equipment, where such equipment will be installed, and reasons why substitutes could not be used, even though such substitutes are not in stock, whereas copper is in stock."

Provisions of Order P-100 Which Governs A-10 Rating For Repairs

Order Is Easy To Use, But Certain Restrictions Apply

DETROIT—To get the preference rating A-10 under Preference Rating Order P-100 less red tape is involved than in the use of any other priority form. The person wishing to apply the rating merely writes on the face of the order:

"Material for Maintenance, Repair, or Operating Supplies—Rating A-10 under Preference Rating Order P-100, with the terms of which I am familiar."

and manually signs this statement.

Part of the text of P-100, which became effective Dec. 18, is published below. The parts of Amendment No. 2, which permit its application to refrigeration repairs for stores and restaurants, are printed in boldface.

The rating cannot be extended by suppliers except to replace materials sold under P-100, and it must not be used to build up stocks in anticipation of filling rated orders.

It is not permitted to purchase materials under the order for expansion or betterment of property or equipment. The customer in such case should file form PD-1A when it is necessary to increase the operating capacity of his business.

The original copy of an order placed under the terms of P-100 must be manually signed; all other copies must bear the special certification as indicated in the order. One copy must be retained for inspection.

Partial Text of P-100

TITLE 32—NATIONAL DEFENSE

CHAPTER XI—OFFICE OF PRODUCTION MANAGEMENT

Subchapter B—PRIORITIES DIVISION

PART 958—REPAIRS, MAINTENANCE, AND OPERATING SUPPLIES

PREFERENCE RATING ORDER P-100

958.2 For the purpose of facilitating the acquisition of Material for (1) the maintenance and repair of the property and equipment of producers as hereinafter defined, and (2) the continued operating of the property and equipment of such producers, a preference rating is hereby assigned to deliveries of such material upon the terms hereinafter set forth.

Such terms shall control until such time as the War Production Board certifies specific quantities of such Material to which the preference rating herein assigned may be applied, or until the War Production Board may specifically limit production by any type of producer or withdraw any type of material from use by such producer, or until the War Production Board may issue an order specifically relating to the maintenance, repair, and operation of the property and equipment of any type of producer.

(b) *Definitions.*

(1) "Producer" means:

(i) any governmental unit;

(ii) any individual, partnership, association, corporation, or other form of enterprise engaged in one or more of the following capacities to the extent that it is so engaged or so acts;

(a) manufacturing, processing, or fabricating;

(b) warehousing—maintaining warehouses for storage or distribution of any Material;

(c) wholesaling—acting as a distributor of products sold to manufacturers, wholesalers, retailers, or other persons not consumers;

(d) charitable institutions — any charitable or eleemosynary institution which is recognized as such for purposes of the Internal Revenue Laws of the United States;

(e) carriers—urban, suburban, and interurban common or contract carriers of passengers or freight by electric railway, electric coach, motor truck, or bus, including terminals of any of the foregoing; railroads, including terminals; shipping—commercial carriers of freight and passengers by ocean, lake, river, or canal, including terminals;

(f) educational institutions (including vocational training);

(g) printers and publisher;

(h) radio—commercial broadcasting and communication;

(i) telephone and telegraph communication, including wire services;

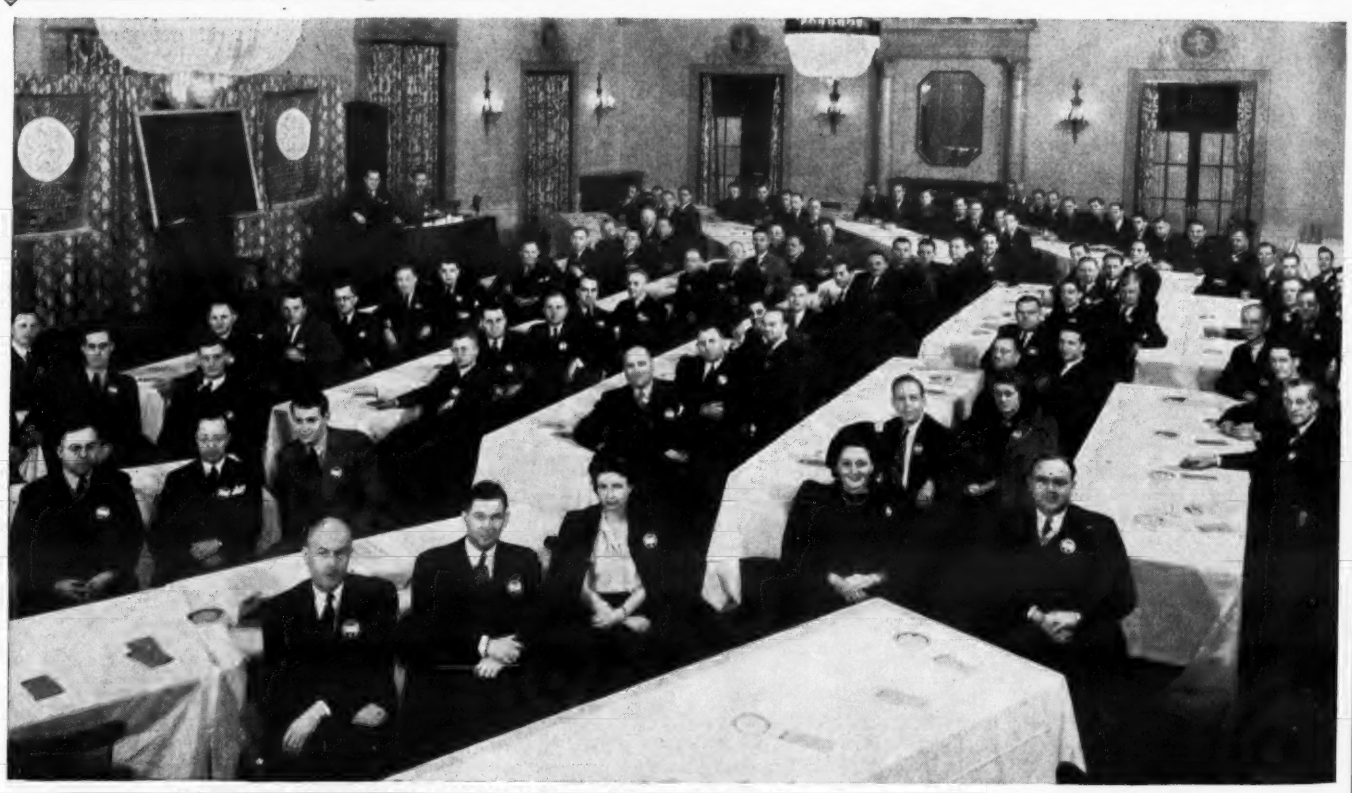
(j) hospitals, clinics, and sanatoriums;

(k) Petroleum and Natural Gas—discovery, development, and depletion of pools of petroleum and associated hydrocarbons, and derivatives thereof, and transportation of petroleum, associated hydrocarbons ,and derivatives thereof;

(l) irrigation systems, whether publicly or privately owned; toll bridges and toll canals.

(iii) **Any person located in the United States, its territories and possessions, using tools or equipment**

Concluded on Page 5, Column 1)



Delegates at General Electric's Retail Development League Open Forum meeting in New York enjoyed three days of spirited, sincere, and informative discussion last Jan. 26, 27, and 28.

Defenders of America's future—the babies of today!

Let us help prepare them for their great responsibility by protecting their health now.

The refrigeration industry is doing its part by keeping fresh the milk and food that is so important to the proper growth of these young Americans.

TECUMSEH PRODUCTS CO. TECUMSEH MICHIGAN

Chieftain

Facing the Facts . . .

ABOUT THE FIRST OF FEBRUARY, from every corner of the country, these retailers of General Electric appliances came to hear the facts. They received last minute reports on developments at Washington . . . probable further curtailment of production, possible "freezing" of stocks and even complete stoppage of production on some lines. All in all, it wasn't a very rosy picture.

But in the face of known facts and unfavorable conjectures, feelings were far from pessimistic. Most Dealers said: "We'll stick with the appliance business." It will mean handling additional types of merchandise, operating with a skeleton staff, increased emphasis on service, and other such expediencies.

NOTE: Since the above statement was written some of the adverse predictions made at these meetings have already come true. This does not, however, affect the broad advertising and service policy of the General Electric Company nor, we believe, the spirit of the retailers of its appliances.

Order P-100 Governs Priorities on Repairs

(*Concluded from Page 4, Column 5*)

to repair or maintain agricultural machinery, refrigerating equipment located in stores or restaurants, or the property of any Producer as defined in (b) (l) (i) and (ii).

(2) "Material" means any commodity, equipment, accessories, parts, assemblies, or products of any kind.

(3) Subject to subparagraph (6), "Maintenance" means the upkeep of a Producer's property and equipment in sound working condition.

(4) Subject to subparagraph (6), "Repair" means the restoration of a Producer's property and equipment to a sound working condition when such property or equipment has been rendered unsafe or unfit for service by wear and tear, damage, destruction of parts, or similar causes.

(5) Subject to subparagraph (6), "Operating Supplies" means any Material which is essential to the operation of the Producer's business and which is consumed in the course of such business including, but not limited to, lubricants, catalysts, small perishable tools, and ferrous material necessary for the fabrication of containers; *Provided,* it shall not include

(i) Any Material which is physically incorporated, in whole or in part, into any Material which the Producer manufactures, distributes, sells, stores, or transports, excepting Material used by Producer to repair or maintain refrigerating equipment located in stores or restaurants, agricultural machinery, or the property of another Producer, or

(ii) any material that is to be used as fuel; or

(iii) any non-ferrous material to be used as packaging supplies.

(6) The terms "Maintenance," "Repairs," and "Operating Supplies" *do not* include the following:

(i) The replacement of an item carried on the Producer's books as a fixed asset;

(ii) material which would not be carried on the Producer's books as Maintenance, Repairs, Operating Supplies, or the equivalent, in the Producer's established method of bookkeeping;

(iii) material for the improvement of a Producer's property or equipment through the replacement of material in the existing installation, unless such equipment is beyond economic repair;

(iv) material for additions to, or expansion of, such property or equipment.

(7) "Supplier" means any person with whom a purchase order or contract has been placed for delivery of material to a Producer or another Supplier.

(c) *Assignment of Preference Rating.* Subject to the terms of this Order, Preference Rating A-10 is hereby assigned:

(1) to deliveries, to a producer, of Material required by him as Operating Supplies or for the Maintenance or Repair of his property or equipment;

(2) to deliveries to any Supplier, who has received purchase orders rated under this Order from a Producer or from another Supplier, of Material which will be delivered by him or by another Supplier to the Producer to fill such rated orders, or which will be physically incorporated into Material which will be so delivered; or which will be used within the limitations of paragraph (f) (2) hereof, to replace in such Supplier's inventory Material delivered to fill orders rated pursuant to this Order or pursuant to Preference Rating Order No. P-22, as heretofore amended. *Provided,* that when any General Preference ("E"o "M") Order assigns a specific preference rating to deliveries of any particular Material to be used by a particular industry or for a specific purpose, such preference rating shall control any the A-10 rating hereby assigned may not be applied; and *provided further,* that the preference rating hereby assigned may not be applied to deliveries of any Material to be used for purposes prohibited by any Order or Regulation issued by the Director of Priorities.

(d) *Persons Entitled to Apply Preference Rating.* The Preference Rating hereby assigned may be applied by:

(1) a Producer;

(2) any Supplier provided deliveries to a Producer or another Supplier are to be made by him, which are of the kind specified in paragraph (c) and have been rated pursuant to this Order.

(e) *Application of Preference Rating.*

(1) A Producer or Supplier, in order to apply the preference rating to deliveries of Material to him, must endorse the following statement on the original and all copies of the purchase order or contract for such Material manually signed by a responsible official duly designated for such purpose by such Producer or Supplier:

"Material for Maintenance, Repair, or Operating Supplies—Rating A-10 under Preference Rating Order P-100 with the terms of which I am familiar."

"

Name of Producer or Supplier

"

Signature of Designated Official

Such endorsement shall constitute a certification to the War Production Board that such Material is required for the purpose stated and that the application of the rating is authorized by this Order. Any such purchase order or contract for such Material shall be restricted to Material the delivery of which is rated in accordance herewith.

(2) The Producers and each Supplier placing or receiving any purchase order or contract rated hereunder, shall each retain, for a period of two years, for inspection by representatives of the War Production Board, endorsed copies of all purchase orders or contracts, whether accepted or rejected, segregated from all other purchase orders or contracts or filed in such manner that they can be readily segregated for such inspection.

(f) *Restrictions on Use of Rating.*

(1) Restrictions on Producer and Supplier—No Producer or Supplier may apply the rating hereby assigned to obtain scarce Material, the use of which could be eliminated without serious loss of efficiency by substitution of less scarce Material or by change of design.

(2) *Restrictions on Supplier.*

(i) No Supplier may apply the rating to obtain Material in greater quantities or on earlier dates than required to enable him to make on schedule a delivery rated hereunder or, within the limitations of (ii) and (iii) below, to replace in his inventory Material so delivered. He shall not be deemed to require such Material if he can make his rated delivery and still retain a practicable working minimum inventory thereof; and if, in making such delivery, he reduces his inventory below such minimum, he may apply the rating only to the extent necessary to restore his inventory to such minimum.

(ii) A Supplier who supplies Material which he has in whole or in part manufactured, processed, assembled, or otherwise physically changed may not apply the rating to restore his inventory to a practicable working minimum unless he applies the rating before completing the rated delivery which reduces his inventory below such minimum.

(iii) A Supplier who supplies Material which he has not in whole or in part manufactured, processed, assembled, or otherwise physically changed may defer application of the rating hereunder to purchase orders or contracts for such Material to be placed by him until he can place a purchase order or contract for the minimum quantity procurable on his customary terms; *provided,* that he shall not defer the application of any rating for more than three months after he becomes entitled to apply it.

(g) *Restrictions on Withdrawals and Inventory.*

(1) Except as provided in paragraph (g) (3) and (4), no Producer who has applied the ratings assigned hereby shall, at any time, accept deliveries (whether or not rated pursuant to this Order) of any Material to be used as Operating Supplies or for Maintenance or Repair until the Producer's inventory and stores of Material to be used for these purposes have been reduced to a practicable working minimum. Such practicable minimum shall in no event exceed 110% of the maximum dollar volume of Material to be used as Operating Supplies and for Repairs and Maintenance in inventory and stores during the corresponding calendar quarter of 1940.

(2) Except as provided in paragraph (g) (3) and (4), no Producer who has applied the ratings assigned hereby shall, during any Calendar Quarterly Period, make withdrawals from stores or inventory of any Material to be used as Operating Supplies or for Maintenance or Repair the aggregate dollar volume of which shall exceed 110% of the aggregate dollar volume of the withdrawals of such Material during the corresponding quarter of 1940, or, at the Producer's option, 27½% of the aggregate dollar volume of the withdrawals of such Material during the calendar year 1940.

(3) From time to time the Director of Priorities may determine that certain Producers or classes of Producers are exempt, in whole or in part, from the restrictions contained in paragraph (g) (1) and (2).

(4) Restrictions contained in paragraph (g) (1) and (2) shall not apply to any Producer during any Calendar Quarterly Period in which

(i) the total volume of his purchases of Material for Maintenance, Repairs, and Operating Supplies does not exceed $5,000: and

(ii) the total volume of his withdrawals of Material for such purposes does not exceed $5,000.

(h) *Audits and Reports.*

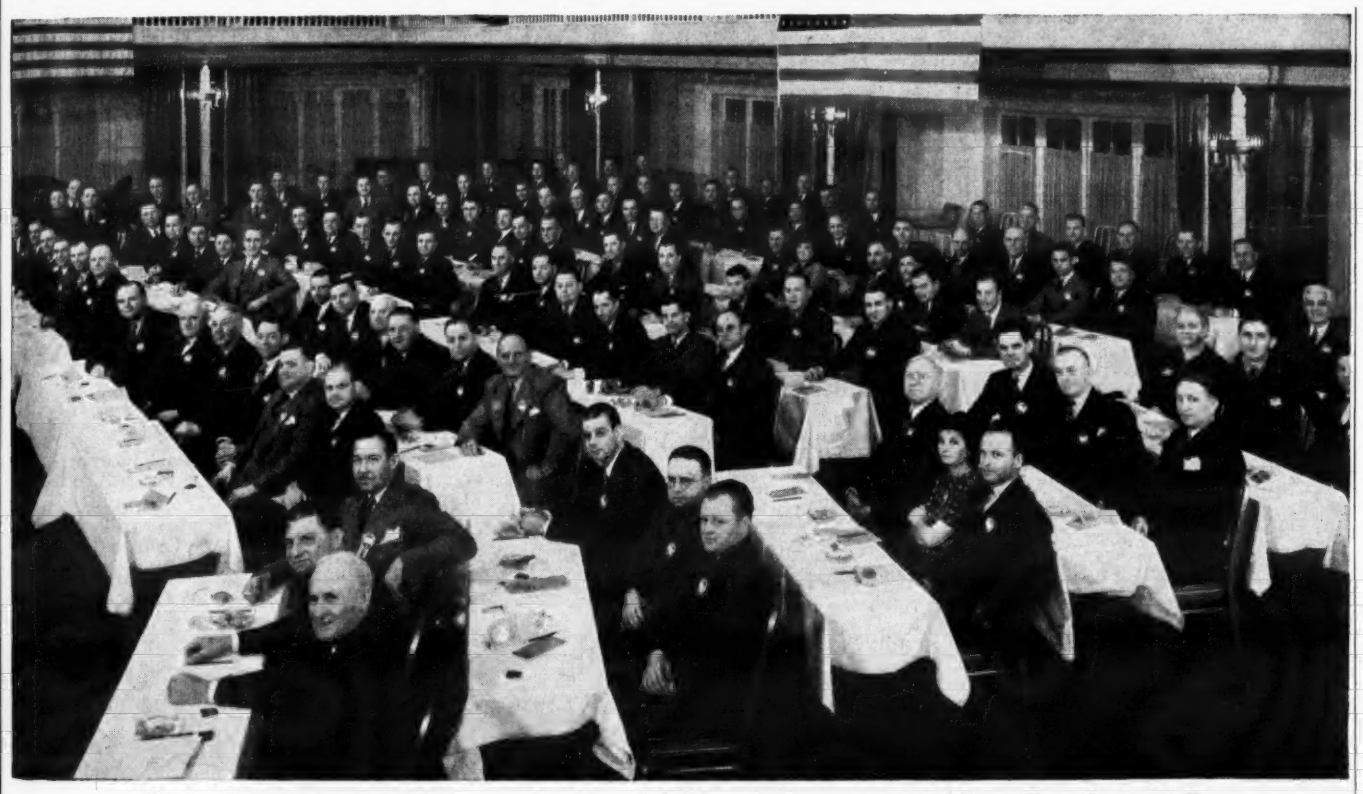
(1) Each Producer or Supplier who applies the preference rating hereby assigned, and each person who accepts a purchase order or contract for Material to which the preference rating is applied, shall submit from time to time an audit and inspection by duly authorized representatives of the War Production Board.

(2) Each such Producer or Supplier shall execute and file with the War Production Board such reports and questionnaires as said Board shall from time to time request. No such reports shall be filed until such time as the proper forms are prescribed by the War Production Board.

Frozen Foods Seen as Boon To Soldiers' Diet

AUSTIN, Tex.—New quick-freezing and dehydrating processes for food are going to make the diet for this war's American soldiers better than it was for the doughboys of 1918, on the word of Luis Bartlett, University of Texas engineer and inventor of a process for dehydrating sweet potatoes.

Especially at training camps is it practical to use frozen and dehydrated foods, said Mr. Bartlett, because it solves a transportation problem and releases tin cans for use at the front.



Chicago R. D. L. meeting Feb. 2, 3, and 4. Many helpful suggestions were received equally enthusiastically by both the attending delegates and General Electric.

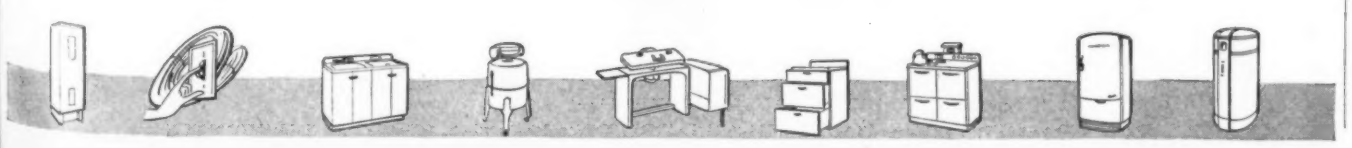
...and the Future, too

But it also means keeping good will and maintaining the Dealer's name before the public as the local headquarters for electric appliances . . . the place where people will go to buy the appliances they've been wanting when things get back to normal.

General Electric plans, through *continued* national advertising, to keep alive Mrs. America's interest in electric appliances and what they can do for her. And, of course, the basic structure of G-E's services to its retailers and the public will also be maintained.

General Electric, too, is facing the facts . . . and the future.

GENERAL ELECTRIC



"BORING from within," the bacteria which cause food decay and spoilage are a real threat to America's war effort. Refrigeration is the only effective weapon against this insidious "fifth column."

The health and strength of our fighters, the morale of all our people, depends on foods kept wholesome and nutritious. And with America engaged in the greatest food production program in history it is largely up to refrigeration to prevent loss through spoilage.

Penn refrigeration controls will do their part in keeping America's commercial refrigeration equipment operating efficiently, economically, dependably. To the service and installation men who are fighting an important battle of this war, we still offer the utmost cooperation consistent with our direct obligation to the armed forces. For maintenance and repairs, as well as for new installations, choose from the complete line of Penn controls. *Penn Electric Switch Co., Goshen, Ind.*

PENN CONTROLS

REFRIGERATION AIR CONDITIONING ENGINE HEATING PUMPING AND AIR COMPRESSOR

Hot Jars of Petroleum Jelly Conveyed Through Cooled 'Trough' To Prevent Damage

MEMPHIS, Tenn.—Installation of a Carrier air conditioning system in the plant of Plough, Inc., drug manufacturer here, has sped the packaging of petroleum jelly to the packaging line's capacity of 100 jars a minute, it has been reported.

The viscous jelly must be heated to a liquid state at 120° F., the heat of the liquid often cracking the jars at the filling machine. This problem was solved by heating the jars with gas before they reached the filling spigots.

But this heating process made the jars too hot to apply stick-on labels and to handle for packing in cartons. To make one last difficulty, the jars cracked from cool air striking them along the conveyor belt.

But worries of Plough, Inc. vanished when a 10-ton Carrier air conditioning system was installed to refrigerate a wooden tunnel enclosure over the line 70 feet long by 10 feet wide to the proper temperature.

Nine conveyor belts run through this tunnel, the first section being heated to a warm temperature, the second to average room temperature, and the third cooled to 50° F. Moving slowly through the tunnel, hot jars of jelly gradually cool as they pass from section to section over a 7-minute exposure before emerging to the labeling and capping machines. Then the jars are cool enough to be picked up for packing and are completely free from cracks and other damage.

Production speed on the line has been more than doubled by this improved method brought about by the air conditioning system, company officials state.

Jewelry Store System Ups Sales, Cuts Testing Time

MEMPHIS, Tenn.—Since a 20-ton air conditioning systems was installed in the A. Graves & Steuwer Jewelry Co. here, a 15% increase in sales has been recorded, Eugene Lott, manager, reports.

Air conditioning has proven particularly effective in cooling a small vault in which watches accurate to the split second are checked against a cronometer. Maintenance of 70° F. cuts testing time. The store specializes in railroad watches.

Two Dallas Contractors Pool For Gov't Bids

DALLAS, Tex.—Two leading air conditioning and refrigeration contractors, Dallas Air Conditioning Co. and Wallace Plumbing Co., have pooled their resources to facilitate their bidding on large-scale government refrigeration and other contracts.

The combined organization, known as Associated Mechanical Contractors, has been awarded a contract for installations in the huge government ordnance plant at Texarkana, Tex.

100-Ton System Being Constructed For New Orleans Clinic

NEW ORLEANS—Installation of a 100-ton air conditioning system in the Dr. Ochner Clinic here will be completed in April, maintaining a temperature of 78° throughout the five-floor building.

The 25-ton units, installed four to a floor, are located in a formerly walled-in lightshaft. For the physicians who use their offices only part-time, the system provides low cost operating economy. Gulf Engineering Co., who is making the installation, estimates an annual saving of $1,800.

Standards For Certain Furnaces Announced

WASHINGTON, D. C.—National Bureau of Standards has announced that a Commercial Standard (CS99-42) for gas floor furnaces, gravity circulating type, may be considered effective for new production from May 25, 1942.

Under date of Dec. 29, 1941 this standard was circulated for written acceptance. Since that time the Bureau has received signed acceptances from a number of manufacturers, distributors, and users, estimated to represent a satisfactory majority.

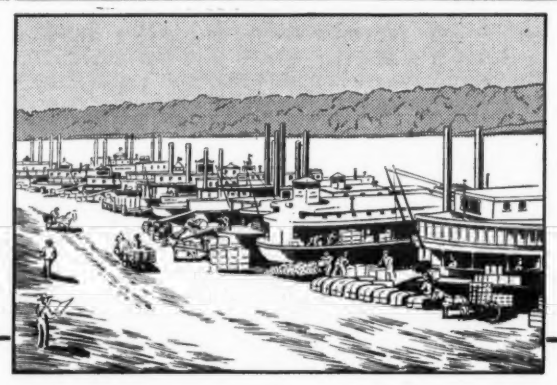
Printed copies of the standard will be mailed to non-acceptors only on speific request, officials of the Bureau stated.

G-E Informs Commercial Dealers About New Fields

At a first of a series of meetings (this one being in Philadelphia) being conducted by the General Electric air conditioning and commercial refrigeration department to emphasize applications that fit into the War program we find S. Martin, Jr. and D. W. McLenegan of the factory headquarters staff getting down to cases with M. Oppenheimer, Automatic Heating & Cooling Systems, Inc., Baltimore; and L. A. Perkins, G-E Supply Corp., Washington, D. C.

Another group of dealers, eager to learn where and how, are R. Coolings, Raub Supply Co., Lancaster, Pa.; Carl S. Morash, Judson C. Burns, Inc., Philadelphia; J. L. Mahoney, Philip H. Harrison & Co., Newark; C. G. Smith, G-E; and Chalmers Strain, C. B. Strain & Son, Poughkeepsie.

CURTIS
ESTABLISHED 1854
ST. LOUIS



The St. Louis River Front 1854

CURTIS LOOKS FORWARD

With Pride in the Past— and Faith in the Future

In 1854, seven years before the beginning of the Civil War, this company was established in St. Louis under the name of CURTIS & CO. Through all these many years, CURTIS has successfully met the challenge of constantly changing times.

We have seen wars and panics, boom times and depressions, come and go. National and international disturbances have held the world's stage and passed into history. But CURTIS has always maintained the high ideals on which this company was founded. We have steadily increased our lines of endeavor — constantly grown in size and national importance.

From a small institution, we have steadily branched out into varied fields, all of which play an important part in the commercial and industrial life of the nation. In the manufacture of products for industry, the CURTIS plant has grown to more than 20 acres — resources have increased tremendously. CURTIS HAS KEPT PACE WITH PROGRESS.

Our entire organization, our research and experimental facilities, are constantly engaged in seeking ways to still further improve all CURTIS products. CURTIS looks back along the years with a strong feeling of *pride* in past achievements, but more importantly, goes forward with the same strong *faith* in the future with which we looked ahead in 1854.

CURTIS MANUFACTURING COMPANY
Saint Louis

CURTIS PNEUMATIC MACHINERY DIVISION • CURTIS REFRIGERATING MACHINE DIVISION
CURTIS CLUTCH DISC DIVISION • CURTIS SAW DIVISION

Commercial Refrigeration Units
Packaged Air Conditioning Units
Saturated Air Condensers

The 20-Acre Curtis Plant of today.

MEET *All* INSTALLATION CODES

Weatherhead valves, fittings and accessories are made to meet the refrigeration codes of all cities.

Valves include angle, two-way, three-way packless, compressor, by-pass, check, receiver tank and relief types.

Fittings have an exclusive flat-sided construction that provides no slip—no strip—no leak installations.

Accessories include pipe flanges, adapters, receivers, charging hose, manifolds and testing valves, all finely machine finished.

THE WEATHERHEAD CO.
300 East 131st Street
CLEVELAND, OHIO
WEATHERHEAD
Refrigeration Valves, Fittings and Accessories

Jewett Has Special Cabinets For Use In Blood Storage Work

BUFFALO—To meet the demands of the nation's war effort, the Jewett Refrigerator Co. has recently developed two new specially designed, large capacity blood bank refrigerators for hospital use designed to preserve ample supplies of blood to meet heavy emergency needs under present wartime conditions, reports J. A. Archbald, Jr., executive vice president. Having their own exclusive use, these new refrigerators are not an adaptation of a conventional refrigerators.

For their specialized purpose these refrigerators have been constructed in the form of cylindrical cabinets, permitting revolving shelves which are easily turned to bring the desired type and quantity of bottled blood within instant reach of the hospital technician. This feature saves precious minutes in emergency cases by eliminating the necessity for unloading shelves to find the correct bottle.

Adjustable shelves can be spaced at any height to fit containers of various sizes.

Adjustable control automatically maintains temperature within a 2° limit. Refrigeration is supplied by forced draft unit cooler which assures uniform temperature throughout the cabinet. Dead pockets or corners are prevented by the round shape of the interior, according to Mr. Archbald.

Self-contained twin-cylinder compressors are standard equipment.

Compactly constructed to conserve space, the larger Model No. 1 Blood Bank holding 180 bottles of 500 c.c. capacity or 150 of 1,000 c.c. capacity occupies floor space only 37 inches in diameter. Able to contain 80 bottles of 500 c.c. or 60 bottles of 1,000 c.c. capacity, the Model No. 2 is only 33 inches in diameter.

Also developed by the company is a low-temperature chest for freezing and storage of blood plasma, demands for which have been greatly accelerated as a result of America's entry into the war.

Chest for low temperature blood plasma storage.

The plasma freezing and storage chest, which is available in either 3 or 6-cu. ft. size with storage capacity of 120 or 240 bottles of 300 c.c. capacity, has a top-lift door which gives immediate access to the interior. Adjustable temperature control provides a range from 0° to —10° F. (—18° to —23° C.) which is said to be well below the allowable maximum. This unit has a self-contained sealed condensing unit.

Waiters Catch, Freeze Tavern's Seafood

PASS CHRISTIAN, La.—Employes of Benny's Tavern, seafood restaurant, catch their customers' fish themselves. The seafood is immediately deep frozen in special sharp-freeze equipment awaiting diners' individual selections, according to Benny French, proprietor.

Southern Refrigeration Co., New Orleans locker-plant and home-locker distributor, made the installation, which consists of a deep-freeze room and cold storage display room. Both rooms are open to customers who want to select their own sea food.

U.S. Official Says Locker Plants Aid Farmer's Diet

MADISON, Wis.—Rural families can probably best obtain vital variety in their diet at an economical cost by means of frozen food lockers, K. F. Warner, of the U. S. Department of Agriculture extension service, told 500 visitors attending the annual Farm and Home Week.

"Frozen food locker plants are another tool by which farm families can protect their essential food supplies, reduce the need for tin and glass, relieve congestion in the central food processing industry, and decentralize our nation's food storage," Mr. Warner declared.

Mr. Warner informed the farmers that more than 4,000 locker plants are now operating in 45 states, handling approximately one-half billion pounds of food annually.

"At present," Mr. Warner said, "the frozen food locker industry's main job is to improve some of the methods by which food is produced, selected, prepared, and handled through the freezer."

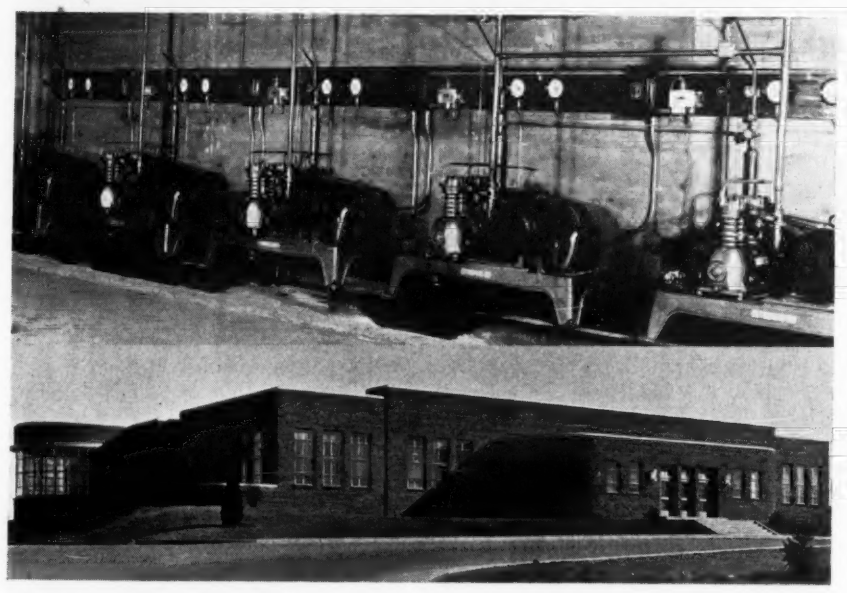
State Hospital Installation Called Model For Smaller Units

5 Machines Serve a Variety of Purposes

PUEBLO, Col. — Five Mills condensing units, installed by Mountain State Refrigeration Co., operated by E. G. and William B. Hall, furnish complete refrigeration for the dining hall of Colorado State Hospital.

The 4-cylinder condensing units are mounted on concrete and I-beam foundations, and the installation is considered a notable example of skilled craftsmanship and proper planning of installation requirements before the work was begun. Only one service call was required during the guarantee period, it is reported.

Of the five Mills units, one is used to supply cold drinking water to seven outlet spigots, day and night; another is connected to thin coils and vacuum plates only, a third serves blower units only, a fourth is connected to a 10-gallon ice cream freezer, and a fifth is connected to a 295-gallon hardening room and a 4 x 8 x 10-foot sharp-freeze room.

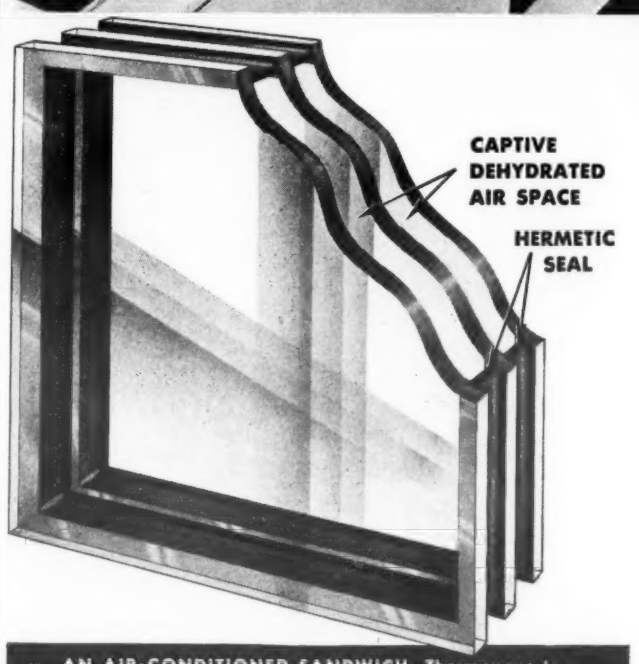


(Upper) Neat five-machine installation to handle the widely varied applications in a state institution. Note concrete compressor foundation and continuous gauge and valve board. (Below) New Colorado State Hospital which the installation serves.

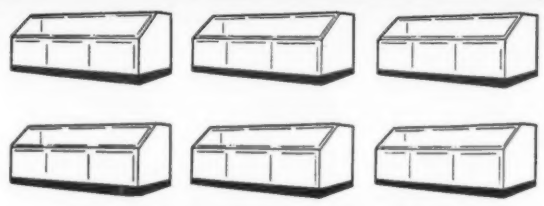
WHY DO 1 OUT OF 10

FROZEN FOOD DISPLAY CASES HAVE L·O·F *Thermopane?*

BECAUSE THERMOPANE HAS 7 BIG ADVANTAGES!



AN AIR-CONDITIONED SANDWICH. Thermopane is a glass unit consisting of two, three or more panes of glass, separated by ¼ inch or ½ inch of captive dehydrated air, and sealed around the edges by an air-tight metal seal. Shipped to refrigerator manufacturers ready to install.



6 CASES CAN BE GLAZED IN THE TIME IT TAKES TO DO 1 THE OLD WAY

Where it formerly took six hours to glaze a cabinet in a certain plant, it now takes but one with Thermopane units. Much time is saved by the elimination of cleaning and polishing between panes. Thermopane is supplied already clean, ready to install.

1. *Quicker to Install.* With Thermopane, there is but a single glass unit to install—instead of two, three or more individual panes. Cabinets can be glazed in one-sixth the time it takes to glaze them the old way.

2. *Cleaning is Eliminated.* With Thermopane, there is no need for glaziers to spend time cleaning and polishing the inside surfaces. The sealed units are spotless inside, ready to install.

3. *Construction is Simplified.* With Thermopane, a simpler arrangement of tops, shims and seals can be employed to hold the glass in place.

4. *No Fogging Up.* With Thermopane the captive air locked between the hermetically sealed panes is absolutely dry and *stays* dry. There can be no condensation between the panes to fog up the glass.

5. *Greater Insulating Efficiency.* With triple glass Thermopane, you get approximately the insulating value of a brick wall 12 inches thick. And there is no breathing in of outside air to decrease this insulating efficiency.

6. *No Dirt Problem.* With Thermopane there is no chance for dust or dirt to seep in between the sealed panes. Thus another difficult servicing problem is eliminated.

7. *Sparkling Clear Glass.* For maximum clarity, specify Thermopane made with L·O·F plate glass. It is ground and polished to provide extra clarity and freedom from flaws. This glass is easier to see through, better to sell through.

GET COMPLETE INFORMATION

For full information about Thermopane glass and for technical advice on its application in their cabinets, manufacturers of commercial refrigerators are invited to write Libbey·Owens·Ford Glass Company, 1337 Nicholas Building, Toledo, Ohio.

LIBBEY·OWENS·FORD

Thermopane

"Better Seeing Means Better Selling"

Midwest Jobbers Discuss Copper and Priorities Orders at Annual Meeting

No Copper Tubing Without A-10, Is Opinion

KANSAS CITY, Mo.—Better use of priorities by the refrigeration supply jobber was the topic of the day when the Midwest Refrigeration Supply Jobbers Association held a meeting March 2 at the President hotel here for its members and a large group of non-members and manufacturers' representatives from mid-western states.

At the meeting E. L. Bengston of the Republic Electric Co., Davenport, Iowa, was elected to serve as president of the Midwest group. Jesse F. Boyd was named vice president, and Walter Burch is secretary-treasurer.

In the round table discussion on priorities the question came up as to the status of the refrigeration supply jobber in selling copper and copper alloy products under the recent amendment to copper order M-9-a. The best opinion obtainable, according to those present who had been in latest contact with the authorities, was that no finished product on the jobbers' shelves with the exception of copper tubing was affected by the order. It was generally believed that jobbers should not sell copper tubing except on orders bearing an A-10 or higher priority.

George Allen, manager of the refrigeration division of Mueller Brass Co., led the discussion of priorities, and also answered an hour's bombardment of questions on the subject.

Mr. Allen made it clear to those present that the priorities problem had forced a great deal of extra expense onto the manufacturers to fill out the required forms and to decide what forms to fill out. This fact was emphasized in an effort to bring home to the supply jobber that the manufacturers are not asking them to fill out the many forms "just for the fun of it." The various kinds of priorities available for use by refrigeration men were outlined.

The suggestion was also made that much delay might be saved if the jobbers would read carefully all of the bulletins and published data wherein information is given as to the exact method of filling out the various forms.

Herman Goldberg, manufacturers' agent from Chicago, made a plea for "holding down" rumors of government action and impending government action. He cautioned patience and a policy of "holding tight" until official interpretations are made of WPB rulings. In conjunction with Tom Plouff of Ansul Chemical Co. he asked for the assistance of all in getting empty refrigerant cylinders returned to the source of supply. A dinner was provided for all those attending through the courtesy of Forslund Pump & Machinery Co., Refrigeration Equipment Co., R. W. Young of Mueller Brass Co., and Charles Anderson of Imperial Brass Mfg. Co.

Others present at the meeting in addition to those mentioned in the news story were:

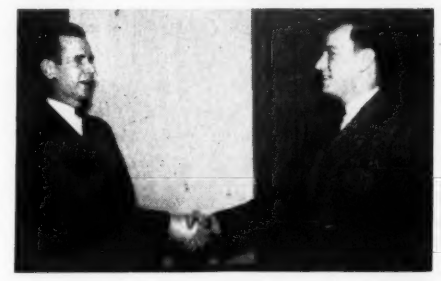
O. A. Forslund, O. B. Breauer, Joe Katherman, R. O'Neil, and Lloyd Roberts, all of Forslund Pump & Machinery Co., Kansas City; Ernie Tramposh and W. L. Davidson, Refrigeration Equipment Co., Kansas City; C. W. Dennis, Dennis Refrigeration Supply Co., Sioux City, Iowa; Harry Hoffman, Hoffman Supply Co., Springfield, Mo.; Fred B. Hovey, Jr., N.R.S.J.A.; Frank Pond, Refrigeration & Industrial Supply Co., Minneapolis; C. S. Ruegg, Ruegg Refrigeration Supply Co., Omaha; J. F. Wickham, Wickham Supply Co., Lincoln, Neb.; K. G. Wight, K & M Supply Co., Tulsa, Okla.

Keith Bowers, Revere Brass & Copper; Bud Evans, Chase Brass & Copper Co.; O. K. McCullough, manufacturers' agent, Kansas City; M. M. Rivard, Detroit Lubricator Co.; Lou Roberts and H. W. Royce, Fairbanks-Morse Co., Kansas City; Lou Snell, Modern Equipment Corp.; and V. Tolson, Metal Goods Corp.

Millott Is Sole Owner Of Minneapolis Firm

ST. PAUL—Announcement of A. T. Millott as sole owner of the Conditioned Air Equipment Co. here, contractor handling commercial and industrial air conditioning, sheet metal, and refrigeration installations, was made last week. Continuing its freezer business, the company is now specializing in installations in defense housing and defense plants, Mr. Millott said.

When Midwest Supply Jobbers Convened



(Upper left) Eph Bengston, Republic Electric Co., Davenport, Iowa, new president of the group is congratulated by his predecessor, Ernie Tramposh, Refrigeration Equipment Co., Kansas City. (Upper right) A "round table" discussion is interrupted for a picture. Seated are C. W. Dennis, Dennis Refrigeration Supply Co., Sioux City, Iowa; and Lou Snell, Modern Equipment Co. Standing are (left to right) Tom Plouff, Ansul Chemical Co.; Herman Goldberg, manufacturers' agent; Joe Katherman, Forslund Pump & Machinery Co., Kansas City; and Bill Davidson, Refrigeration Equipment Co.

(Lower left) In this group are Jess Boyd, Dennis Refrigeration Supply Co.; Frank Pond, Refrigeration Industrial Supply Co., Minneapolis; Fred B. Hovey, Jr., NRSJA; and O. K. McCullough, manufacturers' agent. (Lower right) Bill Davidson, Refrigeration Equipment Co.; Oliver Forslund, Forslund Co.; Carl Ruegg, Ruegg Refrigeration Supply Co., Omaha; and Harry Hoffman, Hoffman Supply Co., Springfield, Mo.

Weatherhead Co. Showed Salesmen 'The Works'

In a 5-Day, 4-City Sales Convention

CLEVELAND—Instead of confining their 1942 sales convention to a single city, representatives of the Weatherhead Co.'s jobbing division last month went on a five-day tour of all the company's plants in the United States and Canada. In charge of the "traveling convention" was G. R. Whippo, Weatherhead sales manager.

The five days' activities began on a Monday with a general meeting of company executives and salesmen at Weatherhead headquarters here. A. J. Weatherhead, Jr., president, welcomed the group and emphasized the company's ability to produce its products for all essential needs.

With a large part of the production of all its plants engaged in defense work, he explained, the company still expected to be able to take care of its regular customers without too much difficulty, but he emphasized that "winning the war came first, last, and always" in the company's plans. Salesmen toured the Cleveland plant, which employs 2,000 workers, where they saw evidence of the company's productive capacity. John Love, "Cleveland Press" columnist, was guest speaker at the evening meeting which closed the first day's activities.

Second day's sessions were devoted to discussions by Weatherhead executives and department heads on priorities, new products, sales promotion, and advertising. That night, the group boarded two special Pullmans for Fort Wayne, Ind., from which they were taken by bus to visit Weatherhead's Columbia Products Co. plant in Columbia City, Ind. M. V. Lowe, plant manager, was host.

Returning to Fort Wayne that night, the men next went to St. Thomas, Ont., where they inspected the company's new Canadian plant under the guidance of N. E. Kilmer, plant manager and secretary, and were honored at a banquet at which Mitchell F. Hepburn, premier of Ontario, was principal speaker. The group then returned to Cleveland by way of Detroit.

To conclude the five-day session, prizes for 1941 sales accomplishments were awarded by Mr. Whipple to four outstanding salesmen at a luncheon in Cleveland. Prize winners were "Landy" Landwerlen, Michigan; Ross Gould, California; Dick McDowell, Pennsylvania; and Bill Minnick, Southern territory.

1930 1933 1936 1940 1942 1947 1952 1958

EXTRA YEARS OF SERVICE

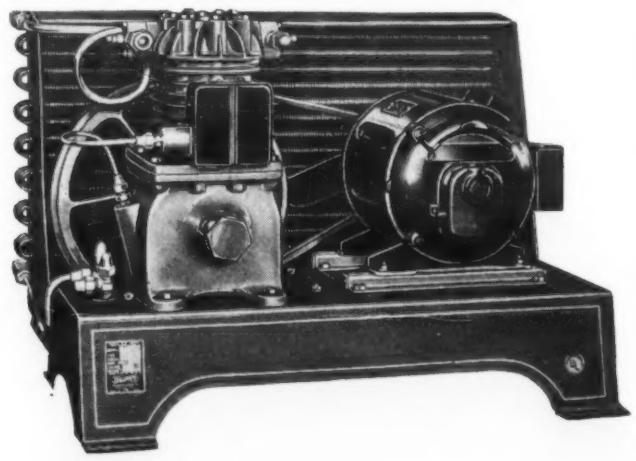
The extra years of service built into Brunner Condensing Units is more important than ever. It means added refrigeration protection for preserving food and preventing food spoilage which is vitally needed for defense.

Brunner condensing units are precision built by the finest methods of manufacture to insure dependable service and long life. All working parts are engineered to give maximum performance regardless of the work they're called on to do. For a quality condensing unit with the ability to serve you well for many years, specify Brunner.

Brunner units are available from ¼ to 25 h. p. air and water-cooled models for every type of application. Write for fully illustrated catalogs. Brunner Manufacturing Co., Utica, N.Y., U. S. A.

BRUNNER

COMMERCIAL REFRIGERATION



BRUNNER MODEL A-100 . . . 1 h. p. air-cooled condensing unit for average heavy-duty commercial applications. It will handle an 8′ x 6′ x 10′ cooler in addition to a 16′ display case. Also recommended for beer coolers and for pre-cooling barrels of beer.

For Defense

CORDLEY INDUSTRIAL WATER COOLERS

CORDLEY & HAYES

452 FOURTH AVE.

NEW YORK

For 1942 — most complete range of styles and sizes — 12 to 71.5 cu. ft. — in the industry. New modern styling — priced for real value.
Reach-in
CABINETS
Midwest
Mfg. Company
GALESBURG, ILLINOIS

SAVE STEEL FOR

VICTORY

RETURN EMPTY CYLINDERS

★ Steel is precious. Every pound counts in filling vital Victory needs. Little can be allocated now for new refrigerant cylinders. You can help Ansul and *all* manufacturers by returning empty cylinders at once . . . by keeping every cylinder *at work*. In doing this, you help the Nation, help yourself, and help your customers. Keep every cylinder on the job—all the time!

ANSUL AC-49

ANSUL CHEMICAL COMPANY • MARINETTE, WISCONSIN

HELP YOUR JOBBER HELP US KEEP 'EM ROLLING!

Low Temperature Is Used To Accomplish Gigantic Metal Shrinkage Task For Bridge

MT. VERNON, Ohio—Value of refrigeration in shrinking or contracting metal to make possible the precise fitting of metal parts has been demonstrated again in the installation of four trunnion shafts at the Mt. Vernon Bridge Co. here.

Dry ice was the refrigeration medium used on the job, and Liquid Carbonic Corp. engineers declare that in many cases where press fits are required, it is much easier to shrink the inner part by contraction under very low temperatures than to force the part with a hydraulic press.

The trunnion shaft measured 7 feet in length, 15 inches in diameter, and had a 4-inch hole in the center. It weighed 3,907 pounds.

It was placed in a refrigerator especially built for the operation by the bridge company and made of 5/16 inch plate steel insulated with rock wool. This refrigerator measured 9 feet high, with an outside diameter of 2 feet 10¼ inches, and an inside diameter of 2 feet 3 inches and accommodated the trunnion and a 300-pound rod inserted into the center of the trunnion. The rod was used to pull the trunnion out of the refrigerator.

The trunnion shaft was installed in the refrigerator at 10 a.m. one day and was pulled at 11:40 a.m. the following day, with observations being made regularly during that period. It took 34 cakes of dry ice, or 1,870 pounds to do the job.

The trunnion was shrunk 13/1,000 of an inch. While the outside temperature was 65°, the temperature of the trunnion shaft was estimated as —104° F.

Many Old Merchant Marine Vessels Being Equipped With 'Cold Holds'

SYRACUSE, N. Y.—Danger of food shipments to allied nations spoiling in transit has been largely eliminated by practically every merchant ship of the United States and other allied nations under construction having part of their cargo holds refrigerated, according to a recent survey by Carrier Corp.

Among the hundreds of ships under contract now being rushed to completion, recent installations of refrigeration equipment completed aboard ships by Carrier Corp. include: motor cargo ship "Island Mail," motorship "American Manufacturer," tankers "Corsicana," "Esso Albany," and "M. E. Lombardi," and motorship "M. V. Ensenada."

Many older vessels, built without refrigerated compartments, are having equipment installed in order to take part in the important job of carrying food to the United Nations.

In describing the installation of refrigeration units on boats, Carrier Corp. cited the motorship "M. V. Ensenada," owned by Naviera Pro-Mex of Mexico and now in service transporting frozen foods.

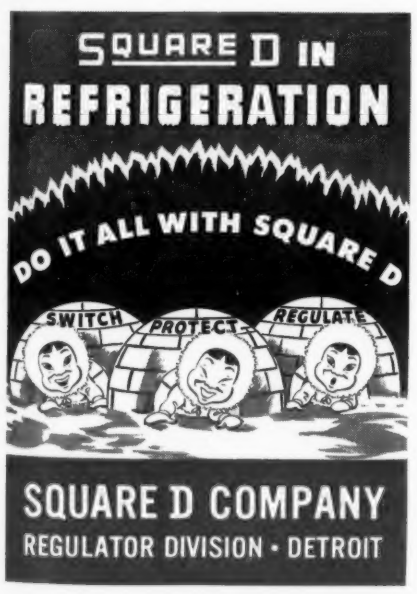
In order to transport frozen foods successfully, the temperature in the cargo hold must be held at 0° F. To lessen the cooling load, the hold of the "Ensenada" was lined with 6 inches of insulation and divided into three compartments by insulated bulkheads or partitions.

Two Carrier "cold diffuser" units supply the low temperature air conditioning. Mounted just forward of the bulkhead separating the refrigerated hold from the engine room, the units are connected by air ducts to and from all three compartments. In this way, any or all of the compartments can be supplied by either or both diffusers.

Refrigeration is supplied by two Carrier compressors driven by two Diesel engines. Shell and tube vertical multi-pass condensers are cooled with sea water from two all-bronze condenser pumps driven by the same Diesels that operate the compressors.

To provide for emergencies, each system consisting of the cold diffuser and condensing equipment is connected as a single unit with only one cross-connection. This is so installed as to allow withdrawal of the refrigerant charge from one system to the other.

The "Ensenada" normally carries a refrigerant charge of 300 pounds of "Freon-12" divided half to each compressor. Either system has sufficient capacity to maintain the temperature at 0° F. when the ship is loaded with frozen foods, Carrier Corp. stated.



WPB Wastes Copper In REA Work, Is Charge

WASHINGTON, D. C.—The House Military Affairs Committee has accused high officials of the War Production Board of "reckless disregard" for the conservation of war-needed copper, claiming that there was "conclusive evidence" of the wastage of copper in the duplication by the Rural Electrification Administration of private power lines already in operation.

The REA line from Pensacola Dam in Oklahoma to the government's aluminum plant at Lake Catherine, Ark., and two other lines were cited.

Diener New Agency on Norge Heating Account

CHICAGO—William L. Diener, Inc. advertising agency here has been appointed to handle advertising and publicity for Norge Heating & Conditioning Division of Borg-Warner Corp., Detroit.

Plans are already under way for an intensive promotion of Norge oil heating units for defense housing projects, it was announced by the agency.

Sears Store Placing Emphasis on Service

LINCOLN, Neb.—Service operations on refrigerators are taking the spotlight at Sears, Roebuck & Co. here to make up for the dwindling stock of new models.

Both floor display and advertising space formerly devoted to refrigerators will be turned over to the promotion of service parts and repairs, C. D. Troyer, manager, has announced.

Buffalo Forge Declares February Dividend

BUFFALO—Buffalo Forge Co. directors have declared a dividend of 45 cents on the common stock, payable Feb. 25 to stock of record Feb. 14.

The company distributed 45 cents a share on Nov. 21, 1941, which was the first dividend payment under its recapitalization plan, followed by disbursing 15 cents a share on Nov. 26.

SAFETY—WITHOUT BULKINESS!

Your men have greater working freedom with this compact

Pulmosan
1600 FUMEGARD

The Pulmosan No. 1600 Fumegard Face Mask is designed on modern gas mask principles. Bulky chest hose, straps and canister are eliminated, affording full protection against refrigeration gases and fumes, with much less interference with workers' activity. Here are a few features: Sturdy rubber face piece; large shatterproof, non-fogging lenses; U. S. Army type flutter exhalation valve; 5-point suspension; airtight fit; efficient absorbents. Before you buy another mask, examine this economical No. 1600 Fumegard.

Pulmosan Safety Equip. Corp.,
Dept. AC, 176 Johnson St., Brooklyn, N. Y.

WRITE TODAY
for literature giving full details and new low price

TODAY, there is a definite suspicion in the minds of the consumer as to whether or not the new models of washing machines, refrigerators, automobiles, air conditioners and other modern conveniences are up to par in quality and durability.

We all know that certain substitutions and changes have been made due to material shortages. Now, it is our *combined* responsibility to tell Mr. and Mrs. John Q. Public that our products are definitely equal or superior to any previous models . . . that all changes or substitutions have been proved by laboratory and field tests *and are a sound investment.*

We at Kerotest, too, have been required to make some changes but most of these have proved so satisfactory that we expect to *retain them permanently* because they are distinct improvements. KEROTEST, today as always, is your best assurance of top quality.

KEROTEST

MANUFACTURERS OF TOP QUALITY VALVES AND FITTINGS FOR THE REFRIGERATION AND AIR CONDITIONING INDUSTRY

KEROTEST MANUFACTURING CO.
PITTSBURGH, PENNSYLVANIA

Air Conditioning & REFRIGERATION NEWS

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Established 1926 and registered as
Electric Refrigeration News

F. M. COCKRELL, *Founder*

Published Every Wednesday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $4.00 per year; 2 years for $7.00. All other foreign countries: $6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

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VOLUME 35, NO. 11, SERIAL NO. 678
MARCH 16, 1942
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Refrigeration Will Help Win the War

Clearing the Decks For Action

SEPARATION of the commercial refrigeration and air conditioning unit of the War Production Board into a separate section of the Division of Industry Operations is being hailed all around the industry as a forward step, one which should simplify the now complicated task of dealing with a harassed and overworked Government.

Problems of commercial refrigeration are quite different from those of household refrigeration. Both types of products are members of the same family; but so are submarines and battleships both naval vessels. Commercial refrigeration is in itself exceedingly diverse in terms of products, applications, distribution, and manufacturing facilities. It requires a full-time, completely devoted department.

DIRECTION OF INDUSTRY IN CAPABLE HANDS

Appointment of Jack Fernald as head man of this new section is also thoroughly approved by those industry leaders whom we've contacted in the last week. He has a long and distinguished record in the industry, both at Baker and at Kelvinator, and in his industry cooperative work he has made a great many friends—all of which will stand him in good stead in the trying days ahead.

Ably assisted by Sterling Smith and Rod Tait, Mr. Fernald can be counted upon to cut through red tape and come up with the concrete program for which the industry has been pleading.

In other words, our days of "marking time," industry leaders feel, should soon be over.

Our Bulletin Issues

INITIAL reaction to our first "Bulletin Issue" was much better than we had anticipated. Most subscribers didn't know just what to expect when it was announced that "for the duration" the NEWS would publish its regular issues every other week, and supply a news bulletin on the alternate weeks.

Several have expressed themselves as being pleasantly surprised.

Providing we gain certain cooperation from the postal authorities, these issues should reach you in record time. They can be produced, addressed, and mailed in a fraction of the time it takes to turn out the bigger issues.

Some readers have also stated their appreciation of the brief, condensed nature of the news bulletin. Advertisers with 52-time contracts believe that these limited-space issues give them a real break—which is undoubtedly true. And we are cooperating with the Government by saving paper.

'We Have Not Yet Begun To Fight'

DISCOURAGEMENT over our showing in the war seems prevalent nearly everywhere—except amongst engineering circles, and especially Detroit engineering circles. What they know and what they are doing can't be published, but suffice it to say that our leading engineers are confident that Hitler and the Japs are going to get the surprise of their lives some day.

In the test stage are some highly interesting weapons, and some remarkable adaptations of existing devices for destruction. Even more interesting, possibly, are the results of turning mass-production talent loose on the business of making war machines.

The military tactician will point out, though, that by the time we get going on this promised production, we may be in an exceedingly tough predicament. The situation is deteriorating rapidly, particularly in the Far East.

In other words, the advantages our engineers will give us may be more than offset by the tactical advantages the enemies have gained by beating us to the draw.

YEARS OF STUDY OF LAND MADE BY JAPANESE

How can one account for the almost completely unexpected success of the Japanese war machine? Well, for a long time we have been wanting to put in our two bit's worth. Having traveled over all the land the Japanese have taken and are threatening—having been on the spot in Singapore, Java, Burma, Australia, India, residing for a time in such headline cities as Darwin, Port Moresby, Surabaya, Batavia, Bandoeng, Rangoon, and Penang—we have a little observation to make.

It is that the Japanese are where they are today because of MARKET RESEARCH. For two decades their "fishermen" have been making minute surveys of every inch of the coastline in that part of the world; and their "traveling salesmen" have been making equally thorough surveys of the interior—complete with photographs.

Place after place the writer went in that territory he ran into agitated local citizens who knew what was going on and who feared it. All through the Pacific—in the Fiji islands, in Papua, at Thursday Island, in Java—were men who were beating their brains out trying to convince distant military and naval authorities that these Japs meant business, and were real threats.

COMPLETE PLANS MADE FAR IN ADVANCE

They got precisely nowhere with their reports on Japanese spy activities.

Result: When the Japs did start, they knew exactly where to go in exactly what size ships with exactly what size forces and exactly what size equipment.

In contrast, United Nations' forces were continually reported as "arriving two hours too late," or sending the wrong equipment, or underestimating the forces needed for a single point, or believing that certain jungles were impenetrable.

Through MARKET RESEARCH, the Japs knew how to penetrate the jungles, how to land in supposedly inaccessible spots, how to utilize their strength to its utmost efficiency.

HEAT AND HUMIDITY ARE PARTNERS OF AXIS FORCES

Another handicap to the United Nations' forces is one we have never seen mentioned in any of the dispatches. It is the handicap of *heat and humidity*. The Japs feel perfectly comfortable in that part of the world. All manual labor in that part of the world is done by Orientals—whites can't stand it. Even "white collar" whites can take it only a few months at a time.

No one who has never spent a day in Surabaya can imagine how listless, lifeless, energyless, hopeless a white man feels in that unbearable climate, especially in the afternoons. The Japs, not being gentlemen, probably redoubled their efforts in the afternoons. And perhaps that may help account for the mass surrenders at Singapore and Bandoeng—surrenders which sickened so many people over here.

These advantages—acclimatization and market research—can be equalized only through overwhelming superiority in weapons plus military and naval brains. That we should achieve. Indian Ocean and Java Sea climate may also be abated by air conditioning—a fact which our Navy is not overlooking.

Authorities aren't kidding when they say that we can lose this war. And the engineers aren't talking through their hats when they say that, as far as weapons go, we'll amaze the world. "We haven't begun to fight." But when we do, let's hope that some market research will have been done, and that those weapons will be used efficiently.

Brains still count, even in a brutal war.

They'll Do It Every Time . . . . . By Jimmy Hatlo

OH, MRS DRIPNOODLE! YOUR HUSBAND IS HERE AND WOULD LIKE TO SEE YOU.
SO-THAT'S THE BLUSHING BRIDEGROOM. FROM THE BUILD-UP SHE'S BEEN GIVING HIM I EXPECTED TO SEE NOTHING LESS THAN A SECOND CLARK GABLE.
THE WAY SHE DESCRIBED HIM SHE HAD ME ALL A-TWITTER. I DIDN'T THINK I COULD STAND IT TILL I MET HIM
WHAT'S WRONG WITH HIS LEGS? IS HE GONNA SIT DOWN OR IS HE ABOUT TO JUMP?
SHE SAID THEIR ROMANCE BEGAN IN A PARK IT MUST HAVE BEEN AT THE ZOO.
I'VE ALWAYS HEARD LOVE WAS BLIND. I NEVER BELIEVED IT UNTIL NOW.
LAMPING THE NEW HUSBAND YOU'VE BEEN HEARING SO MUCH ABOUT
THANX TO BENITO REYES, HIGHLAND PARK, MICH.
JIMMY HATLO
1-27
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LETTERS

CHILEAN DISTRIBUTOR WANTS TO BUY REBUILT UNITS

Katz, Johnson & Cia. Ltda.
Casilla 327, Santiago, Chile

Editor:

For some time past we have been constant readers of your important journal, and therefore feel that we are entitled to request you to kindly put us in touch with firms in the United States who make a business of reconstructing and/or reconditioning household cabinets, and who are at the same time interested in export.

We are exclusive distributor in this country for Frigidaire since 1935. It goes without saying that we are only interested in "Frigidaire" cabinets equipped with compressors and electric motor belt drive—i.e. not with enclosed sealed units.

With every and all thanks for your attention and awaiting your reply we are, dear Sirs,

J. B. PALACIOS

DISTRIBUTOR LIKES PRIORITY NEWS

Byars Forgy Refrig. Co., Inc.
Tampa, Fla.

Sirs:

Your issue of Feb. 25, we thought, carried some valuable priority news pertaining to our line of business, and we would like you to send us 50 copies, as we think it would be good information to pass on to our dealers.

We herewith enclose a check for $5.00 to cover the cost of these copies.

W. M. BYARS,
President

AN ORCHID FOR EDITORIALS

Virginia Public Service Co.
Alexandria, Va.

Editor:

I should like, particularly, to commend you on the editorials that you have published. Behind them is some of the best thinking that I have found anywhere in the industry. Please accept my congratulations.

J. G. BARIESAS,
Advertising Manager

LOCKER STORAGE MANUAL

622 North Seventh St.
Zanesville, Ohio

Sirs:

Please send me the manual, How to Select and Install Air Conditioning Systems, also Refrigerated Locker Storage Manual.

I already have the Master Service Manuals on Commercial and Household service which I have found very useful.

EUGENE MCCLELLAN

G-E Engineer Makes Recommendations For Maintenance Work

NEW YORK CITY — "Prevent trouble before it starts," advocates R. U. Berry, manager of the field engineering division of the General Electric air conditioning and commercial refrigeration department. "Although there is recognition of the vital importance of refrigeration in the preservation of food for civilian use and at present replacement parts of new units may be obtained in emergencies, there is no justification for needless replacement. This is waste, and uses critical materials needed for war work," he pointed out.

The field engineering division is now engaged in aiding G-E dealers and distributors make preventive maintenance service available on a broad basis throughout the nation for, despite the present availability of replacements for essential food refrigeration in civilian use, the difficulties of getting such replacements will increase as the war continues, Mr. Berry believes.

The refrigeration requirements of this nation's armed forces and of vital war industries make it imperative that all civilian users of commercial refrigeration try in every way to make their present equipment last for the duration, Mr. Berry stated. Because few commercial refrigeration owners are equipped to perform their own maintenance, the most economical policy in the long run is to rely on a competent service organization for regular supervision.

In outlining some of the things which a refrigeration service engineer must do in going over a commercial refrigeration installation in providing a maintenance service aimed at preventing trouble before it starts, Mr. Berry stated that the service man must:

(1) Check all joints for refrigerant leaks, (2) check shaft seal for oil or refrigerant leaks, (3) check refrigerant charge, (4) check electrical connections, (5) check compressor oil level, (6) tighten all gasketed joints, (7) clean condenser, (8) align pulleys and adjust belt tension, (9) lubricate all motor bearings, (10) if crankcase runs cold, check expansion valve adjustment, (11) check operation of all controls, (12) clean and polish control contacts, (13) check and clean water regulating valve, (14) remove oil from any rubber mounting blocks, and (15) clean evaporator surface.

Holders of Aluminum 'Excess Stock' Asked To Sell To Gov't

WASHINGTON, D. C.—In a move to acquire possession of all idle aluminum inventories, J. S. Knowlson, WPB director of industry operations, has sent letters to manufacturing users of the metal requesting the sale of all idle and excess stocks to the government.

"Idle and excessive stocks" are defined as that aluminum which is in excess of the amount required to be put into production during the next 90 days in order to meet scheduled deliveries on "A"-rated orders.

Federated Metals division of American Smelting & Refining Co., acting as agent for Metals Reserve Co., will carry out arrangements made by WPB for the purchase and disposal of all aluminum sold voluntarily. It is believed that about 20,000,000 pounds of the metal will be available from excess stocks.

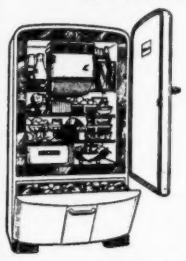
Schedule of prices ranges from current market quotations for ingot and scrap, including castings and forgings, to 50 cents a pound for finished items valued at 99 cents a pound or more on Oct. 1, 1941.

Here's an Advertisement To Build Service Volume

REFRIGERATOR USERS: Attention!

Food preservation is essential to the nation's wartime effort. Proper maintenance of your refrigeration equipment is essential to proper food preservation.

Take advantage of our refrigeration maintenance service



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This advertisement of a New Jersey dealer is a good example of ways to build up service business.

Brunner Engineers Prepare New Type Service Manual

UTICA, N. Y. — A refrigeration service manual, prepared by the engineering department of Brunner Mfg. Co., and covering principles of operation and diagnosis on commercial refrigeration systems, is now being made available by the company.

The price of the book is $2.50 postpaid, and it will be obtainable only from the Brunner Mfg. Co.

The manual was prepared from the viewpoint of its being used as a text or general instruction book on the subject, and is not written about the Brunner product primarily.

In editing the book the Brunner engineers made excellent use of illustrations, showing with pictures or drawings practically every part of the system discussed, various hookups of commercial refrigeration systems, and some service operations.

Fundamentals are emphasized in the text so that the basic installation or maintenance advice will apply even though there may be design changes encountered as the service man applies the information.

Starting with a section on "theory" the manual then goes into the electrical part of the system with a description of motors and controls. This is followed by descriptions of the auxiliary parts of the system, such as valves, oil separators, evaporators, etc.

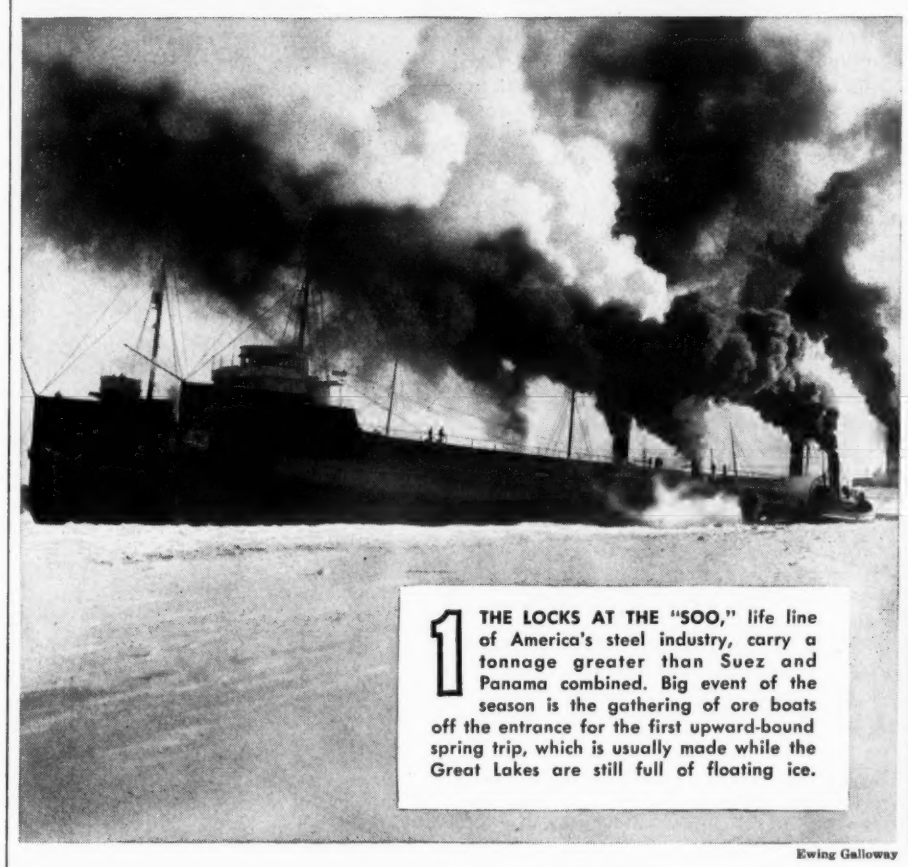
The section on compressor maintenance is a superb piece of work. Parts descriptions are in detail and completely illustrated, and there are pictures of servicing operations.

Final section of the book on "Trouble Diagnosis" is split into two divisions—electrical and mechanical causes of service complaints, and their correction.

The electrical part is principally concerned with a chart of service troubles in motors, and their correction. The "Trouble Analysis Chart" on mechanical service problems charts the problems by "observation," "cause," and "remedy," making for easy reference by the reader.

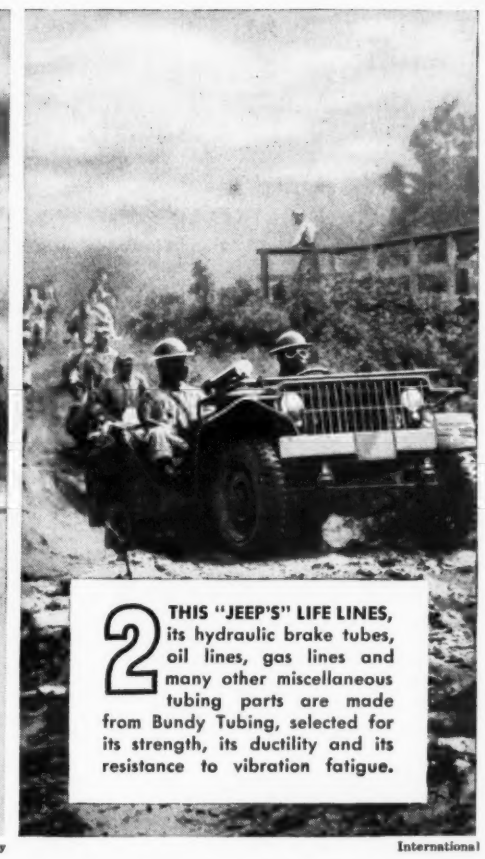
The manual closes with a group of miscellaneous engineering reference tables for handy use by the operator.

FAMOUS LIFE LINES



1 THE LOCKS AT THE "SOO," life line of America's steel industry, carry a tonnage greater than Suez and Panama combined. Big event of the season is the gathering of ore boats off the entrance for the first upward-bound spring trip, which is usually made while the Great Lakes are still full of floating ice.

Ewing Galloway



2 THIS "JEEP'S" LIFE LINES, its hydraulic brake tubes, oil lines, gas lines and many other miscellaneous tubing parts are made from Bundy Tubing, selected for its strength, its ductility and its resistance to vibration fatigue.

International

WHEREVER fuel or lubricants must be carried, wherever vacuums are necessary or hydraulic pressure must be transmitted, Bundy Tubing has long been standard for its strength, its ductility and its resistance to vibration fatigue. So it's not surprising that more than forty types of military automotive vehicles for the United States and its allies use Bundy Tubing for twenty-six basic applications.

Tanks and marine engines, tractor cranes and tandem rollers, radios and radio antennas, ground and parachute flares and expeditionary gasoline cans, welding machines and cartridge loaders, aircraft engines and propellers, battery chargers and searchlight units —these are other random examples of military equipment using Bundy Tubing.

In the equally essential field of non-military defense items, Bundy Tubing plays just as important a part. Farm machinery and tractors, poultry brooders and incubators, excavating and road-building machinery, machine tools and welding machines, coal mining and oil drilling equipment, fire engines and utility maintenance equipment, oil burners and bottled gas — all use one or another type of Bundy Tubing.

If you use tubing in or near Bundy's range of sizes, you should have complete information on the Bundy line. Bundy Tubing Company, Detroit, Michigan.

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BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including 1/16" O. D. This double-walled type is also available in steel, tin-coated on the outside, and in Monel.

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BUNDY "TRIPLE-PURPOSE" MONEL tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel, Monel inside —steel outside, and Monel outside—steel inside. Sizes up to and including 5/8" O. D.

Revere Publishes New 'Copper Data Handbook'

NEW YORK CITY—Fourth edition of the "Revere Weights and Data Handbook" on copper, brass, and bronze products, compiled by Revere Copper & Brass, Inc., has just been made available.

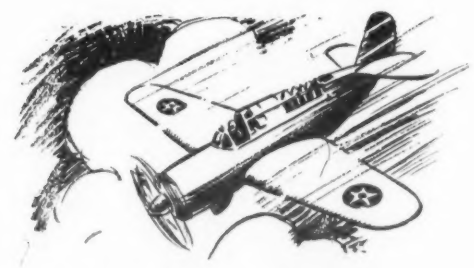
The company believes that this Handbook will be especially useful at this time to many technical men who are in War production work, and to those who are not too familiar with copper or copper alloys.

Those who have a "real need" for the book can obtain a copy by writing Revere Copper & Brass, Inc., 230 Park Ave., New York City, giving name, title, and company.

Howell Joins Gulf Supply Co

DALLAS, Tex.—A. N. Howell has left the staff of Electromotive Corp., refrigeration supplies jobber, to join Gulf Supply Co., jobbing firm headed by J. R. Sparkman.

FOOD WILL WIN THE WAR! Save It With DOLE Refrigeration



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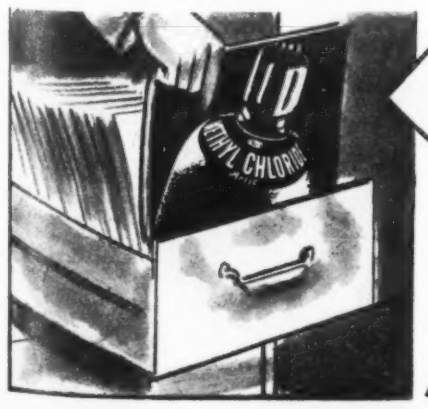

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What to Check When Electric Motor Does Not Start

Motor Troubles & Their Correction

Editor's Note: Following is part of a section on servicing motors, in a series of articles on motor construction and operation.

By R. A. Fuller,
Industrial Engineering Dept.,
General Electric Co.

Complaint - -

B. Motor Does Not Start

8. Leaky Compressor Discharge Valves

"Leaky compressor discharge valves" permit the high side pressure to be built up in the cylinder fairly soon after the compressor stops. When it is to start up on the next running period, the gas pressure in the cylinder may be sufficient to prevent starting. This trouble is usually indicated by an excessive backward creeping of the compressor flywheel during the "off" period.

9. Open Circuit In Rotor Winding

"Open circuit in rotor winding" is an uncommon experience in the squirrel cage rotors of alternating current motors. When these are constructed with soldered joints, overheating can melt the solder which is then thrown off. There will usually be whiskers of solder on the rotor where the solder has been thrown off and splatters of solder on the stator winding. The motor may run hot, trip out the overload, or fail to start. About the only check for this is to resolder the joints and note if this corrects the trouble. Care must be used in this work to avoid causing unbalance by excess solder at one point.

An open circuit in the rotor winding is much more apt to occur in those motors which have wire wound coils in the rotor. Such rotor coils are found on all motors that are equipped with brushes. Single phase repulsion start-induction run motors; three phase wound rotor motors; and direct current motors have this type of rotor winding.

Motors equipped with commutators will tend to develop serious sparking at the point where the brushes run onto the dead commutator segments caused by the open circuited coil. A study of the commutator may show that burning is occurring at a particular spot and thus will lead to a ready location of the faulty coil. The motor may fail to start with the rotor in certain positions. An unsoldered connection or broken wire is the probable cause of the open circuit.

Three phase wound rotor motors can be checked for open circuit in the rotor winding by following the testing methods used in Section B 4 on "Open Circuit in Stator Winding."

10. Short Circuit In Rotor Winding

"Short circuit in rotor winding" will only occur in motors that have wire wound coils in the rotor (see the preceding section for a more complete description of these).

The motor may overheat, burn out a coil on the rotor, fail to start, fail to start in certain positions of the rotor on motors equipped with commutators, or show signs of excessive heating in one rotor coil. The faulty coil can often be located by running the motor for a short time, stopping it and feeling of the rotor winding.

If one coil feels appreciably hotter than the rest, it will tend to be short circuited. On some motors that are equipped with commutators, a short circuit between adjacent commutator segments may cause this effect. Cleaning out the slot between the segments, to remove the carbon dust and other dirt, will correct this.

A simple test can be made for a short circuit in the rotor winding of a single phase repulsion start-induction run motor without special test equipment. Remove the belts and raise all brushes off the commutator or remove them altogether. Then apply normal power to the motor and rotate the motor pulley by hand. If there are one or more points at which the rotor does not turn easily the rotor has a short circuit in the winding. By holding the rotor, in the position in which it is most difficult to hold it, the short circuited coil will become hot and can thus be readily located. Care should be exercised in doing this to avoid burning out the coil.

The fault may be due to a short circuit between adjacent commutator segments (see preceding paragraph) or somewhere in the winding. If in the winding it may be in the exposed part of the winding where wires connect from one slot to the other.

This section of the coil should be inspected carefully and, if located, the trouble can be corrected by insulating the individual wires involved followed by an application of insulating varnish. If the trouble seems to be in the part of the coil that is in the slots the coil must be lifted out and possibly rewound. It is recommended that rewinding be done by a qualified motor repair shop.

A growler is very useful in locating short circuited coils in a rotor winding as shown in Fig. 62. The rotor rests on the poles of the growler which is energized from an alternating current source. If the coil is completely short circuited no spark will be obtained when a wire is touched to both commutator segments to which the coil is connected. If there is a short circuited turn in the coil, the feeler, an annealed piece of hacksaw blade, will vibrate noticeably when held near the slot.

For emergency operation, when one coil is short circuited, this coil can be cut out by cutting completely through the coil at all four points where it emerges from the slots. As this is a rotating part the loose ends must be so held in place that they will not be thrown out when the motor is running.

If the motor has a commutator the two commutator segments, originally connected to the faulty coil, should be connected together as shown in Fig. 63. If the motor has no commutator the adjacent coils should be connected together as shown in Fig. 64. Note particularly that this is an emergency measure.

(To Be Continued)

Fig. 62—Use of Growler On Short Circuits

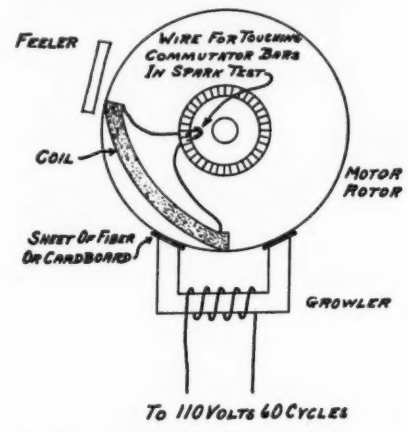


Fig. 63—How To Fix Motor With Commutator

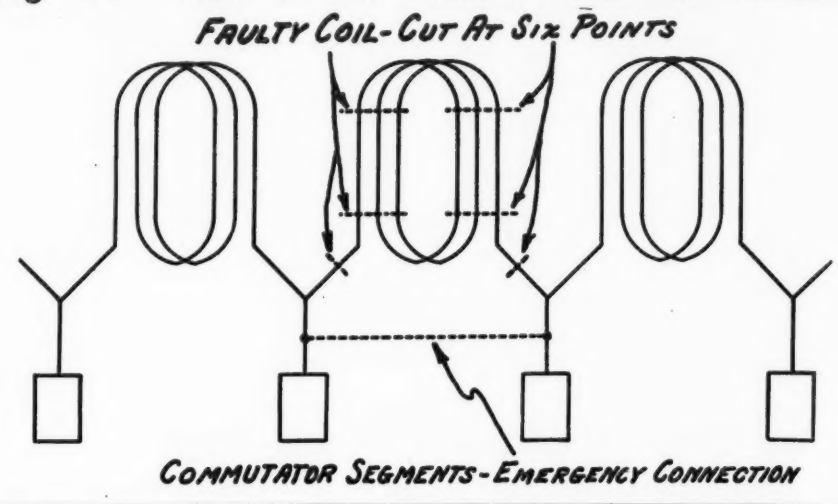
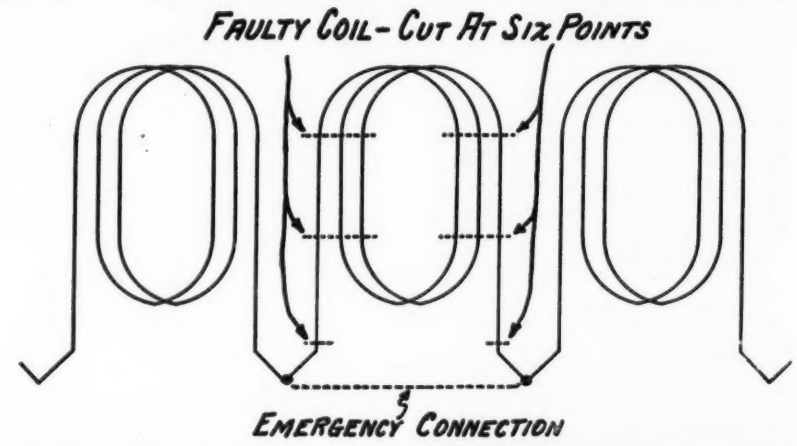


Fig. 64—How To Fix Motor With No Commutator



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IMAGINEERING is the word we have coined to describe the thinking which is used to get those new things ready. Imagineering is letting your imagination soar and then engineering it down to earth. Imagineering needs tools as well as brains.

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THAT'S WHERE YOU COME IN. You are the man *who.* You are the man America is counting on to make the jobs Americans are going to need. You are the man who is going to do the *Imagineering,* in your specialty, that is going to win the place for yourself, your employees, your associates.

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Instalment Credit Is Further Restricted by Federal Regulations

(Concluded from Page 1)

and photographic equipment. Clocks, watches, and floor covering will be added to the list of commodities requiring 20% down payments.

The new curbs on credit purchases were announced by the Federal Reserve at the same time that officials of the Department of Commerce estimated that all-out war production would raise the national income this year to the record-breaking total of $113,000,000,000.

Under the Reserve Board amendment, any lender or vendor who becomes subject to the regulation because of the addition of articles is given until June 1 to register with the Federal Reserve Board in his district on forms obtainable at the Federal Reserve Board or branch. These new registrants are granted a general license between March 23 and June 1.

After April 1, the credit value of a used automobile, instead of being based solely upon the purchase price, is to be based either upon the purchase price or upon the average retail value as stated in such automobile appraisal guides as may be designated by the board, whichever is the lower.

The $113,000,000,000 estimated by Commerce Department experts for this year is nearly three times as great as the depression low of $39,000,000,000 in 1932, and $18,500,000,000 higher than last year's figure.

It was emphasized, however, that this does not mean that civilians will be in a position to purchase more than in pre-war years, largely because of unprecedented taxes and price rises that have occurred despite the price control law and other anti-inflationary moves.

Further tightening of credit terms had been forecast in authoritative quarters several weeks ago. The view in commercial banking quarters is that Reserve Board regulation of consumer credit has not been sufficiently strict to become a positive factor. It is felt that the board is seeking, on the contrary, to bring credit facilities into alignment with production. Curtailed output is felt to be the important factor in reducing the volume of outstanding credits.

It was noted that the period for payment of home modernization loans was not reduced, and that some preference is being given to this field. From a financial point of view, this is not undesirable, since failure to keep up home repairs would possibly cause a loss in values which stand behind a huge volume of outstanding real estate mortgages.

Rumor Says Finance Firms Look at Furniture Field

NEW YORK CITY—Entrance into the furniture field is being considered seriously by many of the leading finance companies that in the past specialized in handling automobile and appliance accounts, the "New York Times" said last week, in an effort to offset to some extent the severe blow to their business caused by curtailed production of automobiles and appliances.

Some thought has been given by finance companies to offering their facilities to furniture retailers in defense areas, where the furnishing of large numbers of homes presents a difficult credit problem because of the greatly increased volume which will be handled by small stores, the "Times" said. Extreme caution, however, would be necessary if that field were entered, it was added, because of the temporary nature of many such communities and the lack of diversification of employment.

Companies that do shift to handling furniture, the "Times" article asserted, will probably discount merchants' long-term receivables rather than deal directly with the consumer, adopting the practice generally followed by existing companies financing furniture.

Those concerns which have underwritten repair work on automobiles in the past will continue to do so, and are looking for an increase in this business, now that new cars are unavailable.

An executive of one large company told the "Times" that the need for a shift to the other fields was not immediate, since a large amount of paper is still outstanding and will come in gradually. No reorganization will be necessary, he added, since most companies are chartered and equipped to handle instalment sales of any type.

Some rate cutting was predicted as a result of increased competition in a field already covered by a number of local furniture sales underwriters. Finance companies already in the field believe that because of their experience they have little to fear in the way of lost volume. However, companies which formerly concentrated on automobiles or appliances can offer regional or national service where necessary, it was pointed out, which many exclusively furniture financing firms cannot do.

Plan 2-Day Program For Toronto Meeting

(Concluded from Page 1)

upon their time by the current situation.

Program for the meeting has been set as follows:

Sunday, March 15

9 a.m. to 11 a.m.—Registration.

11 a.m.—Dedication and commemoration by H. T. McDermott, international R.S.E.S. secretary, and others.

2 p.m.—"The Service Situation in the United States," by E. B. Wilkins, Frigidaire.

3:30 p.m.—"Copper Goes to War" (technicolor film) by E. Beatty, American Brass Co.

Monday, March 16

9:30 a.m.—"Reoperation of Condensing Units" by William Marshall, Marshall Refrigeration, Leaside, Ontario.

9:45 a.m.—"The Parts Situation" by J. D. Ross, Railway & Engineering Specialties, Montreal, Quebec.

10:15 a.m.—"Fittings," by George Allen, Mueller Brass Co.

11 a.m.—To be announced.

12:30 p.m.—Luncheon for Supporters, Speakers, and Committee.

2 p.m.—"Moisture in the System," by K. M. Newcum, vice president, Superior Valve & Fittings Co.

2:45 p.m.—"Plastics" by A. E. Byrne, General Electric Co.

3:30 p.m.—"Refrigerants" by R. H. Israel, Virginia Smelting Co.

4:30 p.m."Information Please" by H. S. Parish and a board of experts.

7 p.m.—Banquet.

9 p.m.—Dance.

Congress May Pass Law On Inclusion of Smaller Firms in War Work

WASHINGTON, D. C.—Legislation to authorize Donald M. Nelson, chairman of the War Production Board, to appoint a special deputy to handle problems of small manufacturers and bring them into the production program seems likely to receive favorable action from the Senate Banking and Currency Committee, it was reported here last week.

Members said this idea had been received more favorably than a bill introduced previously which would seek to create a "small business division" with the WPB.

The new plan calls for the establishment of a $100,000,000 Small War Plants Corporation, which would make capital loans and give other assistance to companies seeking war contracts.

Reace Is Promoted by Commonwealth Edison

CHICAGO—Appointment of William T. Reace, former manager of merchandise sales, as assistant to the vice president in charge of sales of Commonwealth Edison Co. here effective March 1 has been announced.

L. J. Ottomeyer has been named staff assistant to the vice president. William R. Cannon, previously assistant manager of merchandise sales, was promoted to manager of merchandise sales, while Leonard F. Mahlke, formerly assistant to manager of merchandise sales, is now assistant manager.

Mr. Reace began his career with the Chicago utility as a sign salesman in the old contract department in 1916, later serving as a lighting salesman, appliance salesman, and industrial heating engineer. He was appointed supervisor of electric refrigeration sales in 1928, assistant manager of merchandise sales in 1936, and manager in 1938.

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Various sizes of "ACE" doors.
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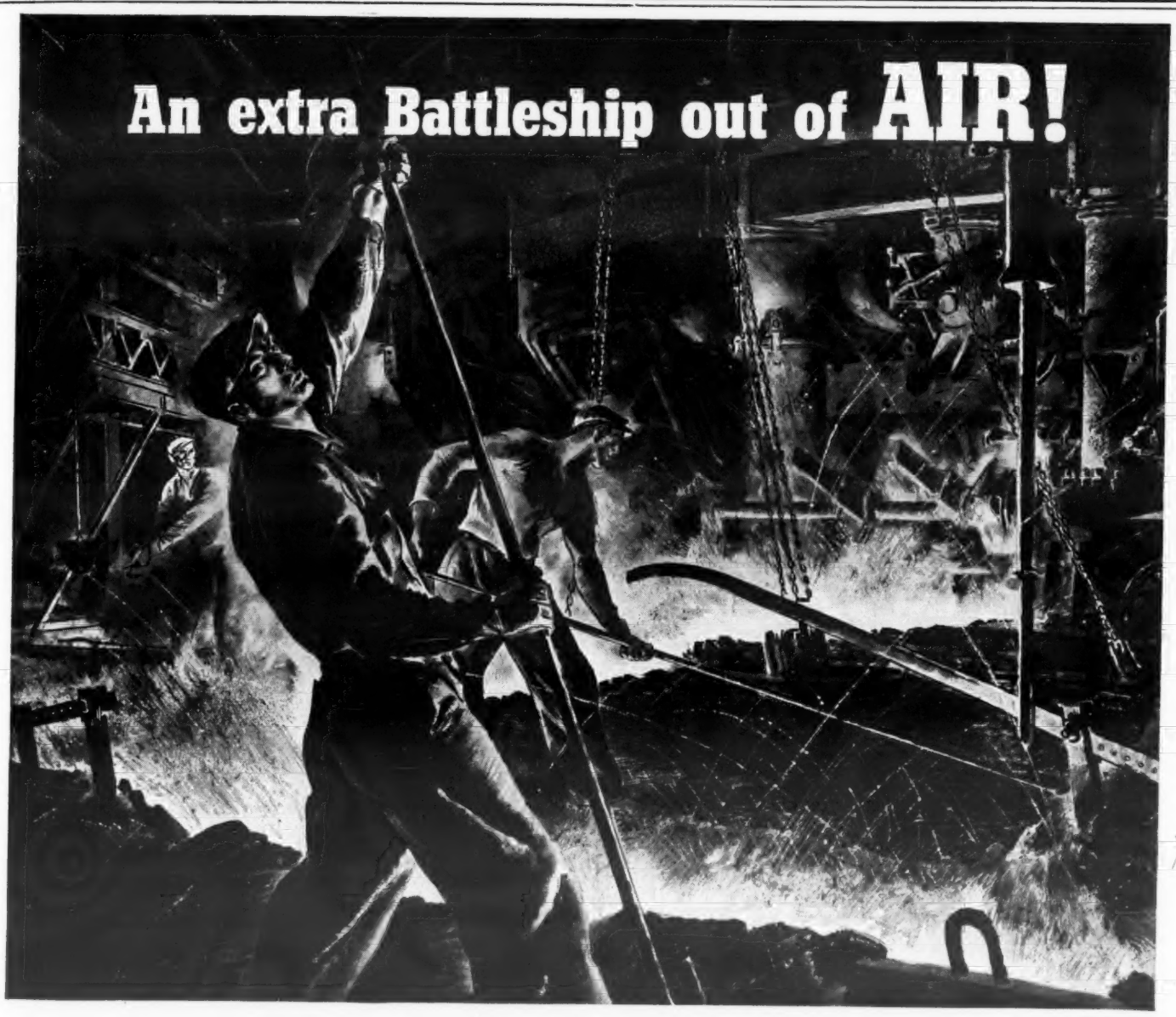

Blast furnace + air conditioning = more iron

At the Woodward Iron Co., Alabama, in the first blast furnace where modern air conditioning was applied, as much as 27% more iron has been produced. Its quality is more uniform. And thousands of tons of coke are being saved. Result—every four months the air conditioned blast furnace produces enough extra iron for another first-line battleship.

Here is a typical new *industrial* application of Carrier Air Conditioning, illustrating the remarkable progress now being achieved through control of the temperature, humidity, and cleanliness of air.

520-TON CARRIER CENTRIFUGAL REFRIGERATION MACHINE is the heart of this new "dry blast" method of iron production. Coupled with a spray-type dehumidifier, it "conditions" 2700 tons of air fed to the blast furnace each day—extracting up to 30 tons of moisture—eliminating unpredictable temperature variations in the reduction zone.

Over 1000 Carrier Centrifugal Refrigeration Machines are now at work . . . many in key defense plants making aircraft engines, explosives and munitions, food processing and storage, laboratory research and testing, parachute and flying equipment. They also make possible complete, low-cost air conditioning for "black-out" plants, hospital operating rooms, and bomb protection shelters.

Carrier engineers in principal manufacturing centers work hand in hand with architects, engineers, and executives in helping select equipment, perfect new methods of installation—apply time and money-saving, tested "short-cuts", thus insuring the success of the finished job. For refrigeration or air conditioning data, call your Carrier representative.

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The Navy "E", one of the U. S. Navy's most coveted honors, has been awarded to Carrier Corporation for excellence in war production.

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WEATHERMAKERS TO THE WORLD

Education of Customers In Handling Foods In and Out of the Plant Sells Locker Service

Advice Given on Preparation, Feeding, Curing, Wrapping

WEST MEMPHIS, Ark. — That educating one's customers is a certain method of doubling locker plant business is the contention of J. "Tommy" Thompson, who in three months increased rentals of the 300-unit Frozen Food Lockers of West Memphis from 108 to 243.

Mr. Thompson, who handles 1,800 pounds of meat daily, takes each new customer on a complete tour of the plant, tries to teach him better methods of handling food prior to storage. He tells customers to bring home-killed meats into the plant properly cleaned and within four hours after killing, vegetables and fruits within two hours of picking.

"Meat and produce should be thoroughly cleaned before freezing," Mr. Thompson emphasizes to his customers. "A lot of customers bring in dirty meat, intending to clean it before cooking. When they forget and meat isn't satisfactory, they blame the locker plant operator."

Further advice Mr. Thompson gives to customers who kill their own meat is to cut hams, shoulders, and loins into at least two or three small pieces to facilitate wrapping and to lessen the chance of customers growing tired of the meat before it is consumed, proving the economy of the refrigerated locker plant.

While the customer watches the process, Mr. Thompson wraps each piece of meat thoroughly to prevent dehydration. When meat is loosely wrapped, he says, gaps are left in the paper through which moisture goes directly to the cold plates, requiring frequent defrosting and endangering the flavor of the food. He wraps the meat in small pieces first in waxed paper, then in a heavy-texture parchment paper.

Not satisfied with customer education within the locker plant, Mr. Thompson tells his customers to spend extra effort and time penning up and feeding their stock several weeks before killing. As 60% of his customers kill their own meats, Mr. Thompson's aid is found valuable.

Accent on good smoking and sugar curing has appealed specifically to this bracket of trade, inasmuch as Mr. Thompson's plant is the only one in the area to provide this service. With his new Griffith smoker Mr. Thompson is now smoking about 18% of his total volume and has found that this one service has brought him 30 new locker customers in a 90-day period.

Mr. Thompson operates his refrigerated locker plant in such a way that customers do not have to enter its cold chambers. "Satisfied customers are my only advertising asset," he declared.

Carrier's Sectionalized Smokehouse Permits Easy Moving and Additions

SYRACUSE, N. Y. — Low-cost operation with quality results is claimed for the Carrier "air conditioned smoke house" described in a new bulletin just issued by the company. Detail drawings and pictures of installations supplement descriptions to illustrate how the smoke house operates.

The smoke house provides meat smoking, cooking, and showering all in one unit. It is simplified in construction to permit easy installation, being factory assembled in units for perfect alignment, the bulletin claims. The equipment and structural steel are hot-dipped galvanized, fittings are cadmium-plated for corrosion resistance, and panels are made of 20-gauge galvanized steel.

"Compact, simplified air conditioning equipment facilitates quick installation," the bulletin says. "Enclosed and within the smoke house rear there are no accessories to consume otherwise usable space. There is no need, outside the house, for insulation where it might become soggy from water vapor and creosote. Easy accessibility to all parts contributes to the ease of operation. By removing the access panels on the air conditioning apparatus, the fans and coils can be cleaned with a hot water hose."

Air circulation is by double-inlet, centrifugal fans. Controlled heat, essential to meat quality, is provided by non-ferrous coils, while humidity control is achieved with a special steam-spray humidifier.

Absolute control of humidity during drying and smoking is said to be obtainable automatically with a separate hot-dipped galvanized exhaust unit, which can be mounted remotely if necessary. Newly developed floor diffuser plates and ejector nozzles assure uniform distribution for all types of loads.

Doors of the smoke houses are hung with cadmium-plated, adjustable hinges and open from inside or outside. Sponge rubber gaskets effect a seal on the doorways. Two-inch thick asbestos used in all wall and ceiling panels and doors is meant to conserve heat. Insulation has no corroding effect on the galvanized panels in the presence of heat and moisture.

"Your smoke house can grow with you," says the bulletin, explaining that if you need an additional house after installation, you can make use of common walls instead of building complete house due to the manufacture of standardized parts.

It appears that the smoke house can move with you, too. "If, after installation, you decide to re-arrange or expand your plant, the sectionalized construction of the Carrier Smoke House makes it easy to disassemble and install it in a different location," declares the bulletin.

It is pointed out that control of clean smoke for one's product conditioning is supplied by a scientifically designed, welded steel, smoke pot. This smoke generator has three chambers: (1) a bricklined combustion chamber, (2) a dirt trap, (3) a chamber where smoke is filtered by a 15-layer, 14-gauge steel screen. Smoke density can be regulated by the dampers, while all parts of the generator are accessible for cleaning.

Maher & Boggs Form Refrigerated Locker Engineering Concern

ST. LOUIS COUNTY, Mo.—Frank J. Maher and Rex A. Boggs have announced the organization of the Food Locker Engineering Co. of America, at 16 N. Brentwood Blvd. here, as a result of combining the Maher Food Locker Construction Co. of St. Louis and the Rex Refrigeration Service Co. of Decatur, Ill.

A food storage locker plant of 505 lockers, a smoking and curing room, a large cooler, and a completely glassed-in processing department are located in the rear of the new company's building, which measures over 100,000 sq. ft. General offices are in the front.

Fifty persons are engaged in building work, promotional duties, and general office detail, while 16 salesmen are employed in the sale of locker plants for the firm.

Mr. Maher, who was editor of the "Meat Merchandising" magazine for six years, has written books on the food storage locker business, and claims to have visited approximately 1,500 locker plants for information.

Mr. Boggs has been active in selling locker plants for over four years and associated with the refrigeration industry for 16 years.

200-Locker Plant Will Be Built In St. Louis

ST. LOUIS—Big Bend Cold Storage Lockers, Inc., a 200-locker plant, will be part of the Big Bend Super Market to be built in March on Big Bend Rd. southwest of the city, the first in that vicinity. The market's meat section will handle meat in entire quarters for customers who wish to save by large-scale purchasing.

The Machine For Your Next Job...
If it's a refrigeration job ...no matter how big or how small...we can supply Lipman equipment to fit the specifications. Let us work with you.
GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-3, Beloit, Wis.
Model 153 Water-cooled Machine
Lipman

there's a WAR to be won!

AND CONSERVATION OF MATERIALS

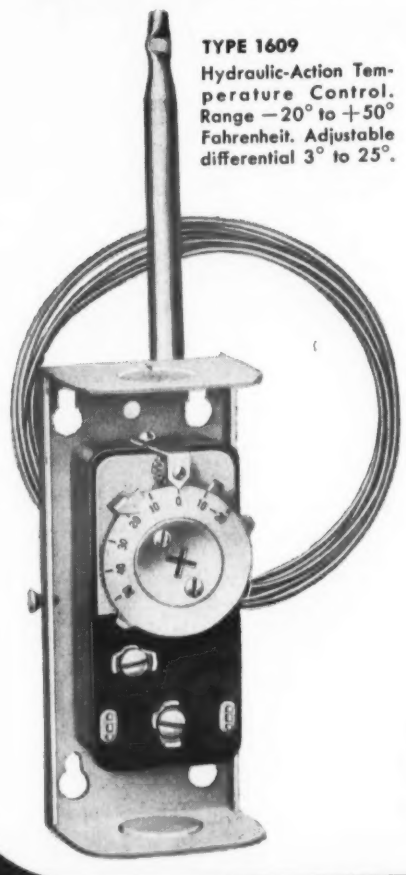
AND MANPOWER IS ESSENTIAL

★

Perhaps you can't get everything you need today . . . or tomorrow either. Neither can we.

TYPE 1531
Low-side Pressure Control. Range, 25 inches of vacuum to 50 lbs.—adjustable differential, 5 to 35 lbs.

But that's part of the job of winning a war . . . and while it lasts we'll all make the best of our time and the quantity of materials we are able to procure.



TYPE 1609
Hydraulic-Action Temperature Control. Range −20° to +50° Fahrenheit. Adjustable differential 3° to 25°.

Today . . . when you can get priorities and allocations . . . you'll save more man-power by letting White-Rodgers' clearly calibrated dials eliminate guesswork and repeated gauge-testing . . . by letting their accurate performance reduce service calls . . . and by using their flexible mounting facilities to conserve installation time.

★

HYDRAULIC ACTION CONTROL

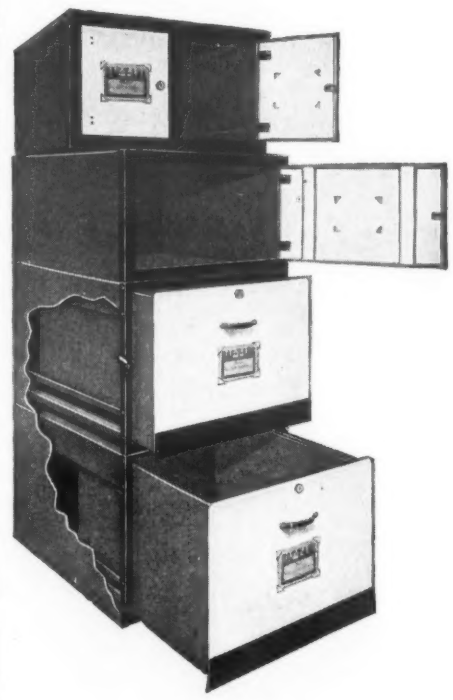
WHITE-RODGERS ELECTRIC CO.

1211c CASS AVENUE • SAINT LOUIS, MISSOURI

Controls For Heating ★ Refrigeration ★ Air-Conditioning

Localizing Of Rural Trade Helps Locker Plant Owners

The rural trade is moving back home from so-called key trading centers, and this change in buying practices is making the home town merchant a factor in retail distribution channels. This is due not only to tire shortage and conservation but to present restricted deliveries by truck and railroads which may become more acute before long.



Locker Plants are helping to conserve our transportation facilities for defense by making available to their communities adequate food storage facilities for civilian use. Food will be a vital factor in winning the war and everyone must cooperate in conserving it.

The Right Locker Is Important

Be sure your lockers fulfill every requirement of sanitation—protection against odors—dehydration, etc. The safe way is to specify Masterbuilt Lockers. Ask us to send you full particulars on Masterbuilt Lockers. Do it today.

Master Lockers are endorsed by and sold only through distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

Over 250,000 Masterbuilt Lockers in Use

A Message to Wholesalers and Retailers —

IS YOUR BUSINESS DRYING ON THE VINE?

In Times of Drouth — IRRIGATE

At the present time, the commercial refrigeration and parts industry is in the midst of the worst drouth it has ever experienced. Peace time stock piles are dwindling, materials to replenish them are unobtainable. Months ago the Great White Fathers promised rain, but none has come. The fields are hard and caked, and many businesses are drying on the vine.

To companies with ingenuity, there's a way out. An opportunity exists to get business right now. Wise producers are getting it.

While Washington has so far not found it expedient to consider food preservation in retail markets a necessity, it is now buying vast quantities of refrigeration equipment for camps, ships, and shore bases all over the country. In 1941, the government was this industry's biggest customer, and it will be an even bigger customer in 1942.

Washington also recognizes the essentiality of refrigeration for factories, shipyards, steel mills, hospitals, warehouses, and a long list of other establishments. An increasing volume of equipment for product cooling, for industrial processing, and for air conditioning is being bought today in all these places.

Much of this equipment is being obtained direct from manufacturers. But a sizeable quantity—and the amount is increasing—is being purchased out in the field from local distributors, contractors, dealers, and service men. A considerable percentage of the equipment purchased direct is also being installed by local firms.

Sales and service organizations alert to these opportunities are getting business. They are getting it on priority. It's helping to keep them operating.

If you are in a position to handle some of this business, why not go after it? It's worth digging for.

Information which will help you learn how is now appearing regularly in Air Conditioning & Refrigeration News. Priority business is an irrigation ditch which may help you save the vine RIGHT NOW.

Air Conditioning & REFRIGERATION NEWS

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A Question For Engineers

Manifolding of Unit Coolers Presents Problems For Efficient Operation

By S. Charles Segal, Kramer Trenton Co.

Unit coolers are usually operated at a temperature differential between average box temperature and average refrigerant temperature of 10° to 20° F. Since for a given refrigerant pass the pressure drop varies approximately as the square with the B.t.u. load, the variation in pressure drop for a given unit is considerable.

To illustrate: assume a pressure drop of 4 lbs. for a given refrigerant pass operating at 10° temperature differential and assume the capacity of the unit is proportional to the temperature differential. If the temperature differential for this same refrigerant pass were doubled, the B.t.u. load would be doubled and the pressure drop would be squared or 16 lbs.

An excessive pressure drop in a unit cooler has three major objections:

1. It is difficult to obtain good expansion valve control.

The control and regulation of the refrigerant flow in a direct expansion coil is usually controlled by a thermostatic valve and to obtain proper valve operation it is necessary that the internal pressure drop of the refrigeration coil should not exceed 4 lbs., unless the valve is equipped with an external equalizer.

The metering of the refrigerant through the valve is controlled by the temperature of the feeler bulb. Since there is a definite relation between temperature and pressure of the expanding refrigerant, a pressure drop will cause a corresponding drop in temperature. If the pressure drop is more than 4 lbs., the feeler bulb will become cold and throttle the expansion valve thus starving the coil.

2. The compressor capacity is reduced.

Since the capacity of a compressor varies with the suction pressure or temperature, an excessive pressure drop through the low side of the refrigeration system will result in a decrease in compressor capacity. Fig. 1 shows the effect of reducing the refrigerant temperature on the capacity of the compressor.

3. The relative humidity of the air is reduced.

The reduced refrigerant temperature caused by the excessive pressure drop will decrease the coil surface temperature which in turn will remove more moisture from the air passing through the coil. The result will be a lower wet bulb and a corresponding lower relative humidity.

PRESSURE DROP VARIABLES

The refrigerant pressure drop depends upon a number of variables, such as: diameter of tube, length of tube, internal condition of tube, B.t.u. capacity, refrigerant used, and refrigerant temperature. For a given unit cooler all the above variables can be made constant with the exception of B.t.u. capacity and refrigerant temperature.

The unit cooler, as built today, is usually constructed of ⅜, ½, ⅝, or ¾-inch O.D. tubing. Most manufacturers have limited themselves to one size of tubing with ½ and ⅝ inch appearing to be most popular. In almost every case a complete line of units with a large range of capacities are built with one size of tubing. As illustrated previously, due to the excessive refrigerant pressure drop that will develop with large B.t.u. capacity, there are definite practical limits to the B.t.u. capacity of a refrigerant pass for a given size of tubing. Table 2 gives the approximate limits of various tube sizes when used with "Freon."

TABLE 2—APPROXIMATE LIMIT FOR SINGLE PASS UNIT COOLER

O.D. Tubing	B.t.u./hr./20°T.D.
⅜"	2,000
½"	4,000
⅝"	8,000
¾"	16,000
1 "	36,000

These limits are only approximate since there will be variations depending on the type of surface, airflow, and refrigerant temperature. The limits would be higher for methyl chloride. This limit presents the major problem of manifolding or multi-passing the refrigerant through the coil.

One of the difficulties in manifolding is the condition of the refrigerant after leaving the expansion valve. When the refrigerant passes the expansion valve a change takes place; the pressure and temperature are both reduced. A portion of the liquid is vaporized to obtain the temperature reduction.

Assuming conditions of 90° liquid and 20° suction, about 25% by weight of the liquid is vaporized to cool the remaining liquid; the vaporized liquid is usually referred to as flash gases.

The relation of the liquid and flash gases by volume is surprising. The liquid is about 4% of the flash gases by volume. In other words the flash gases are 25% by weight and 96% by volume of the liquid immediately after leaving the expansion valves.

The quantity of refrigerant that enters the coil is controlled by the expansion valve which has a tendency to modulate rather than maintain a constant flow. The intermittent flow coupled with the non-homogenous condition of the refrigerant add to making manifolding a serious problem.

Good manifolding is based on two fundamental design conditions:

1. Each pass should be identical in physical construction.

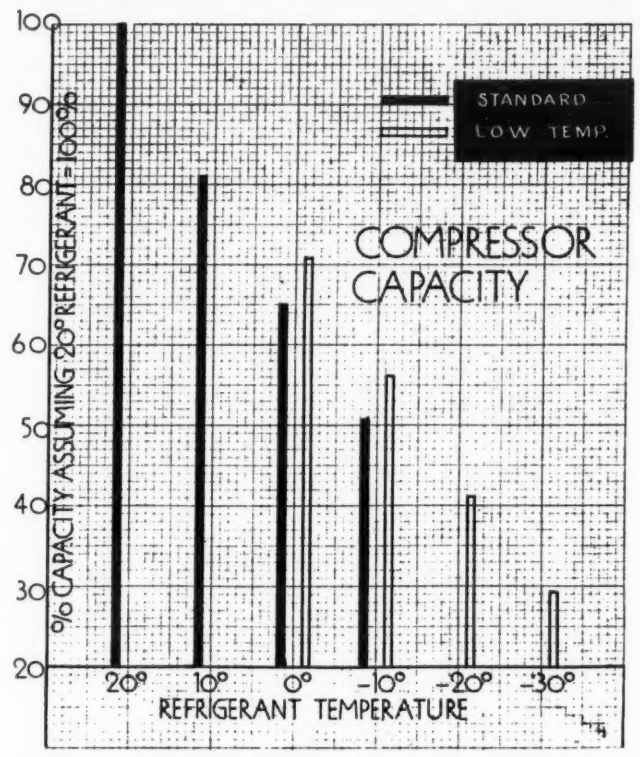
2. Each pass should have identical B.t.u. capacities under all conditions.

The most common manifolding used on unit coolers is a straight manifold on top and bottom illustrated in Fig. 3. While this method of manifolding has been used over a period of years the efficiency of the coil is reduced. This method divides the coil into equal sections of identical physical construction, but the passes do not have equal refrigeration loads.

The capacity of a coil depends upon the temperature difference between air and surface temperature. For the sake of argument let us assume we have a coil of six stacks, each stack identical in physical construction and the same amount of air passing through each stack. We will also assume that the surface temperature of the complete coil is

(Concluded on Page 17, Column 1)

Fig. 1—Effect on Compressor Capacity



This graph shows the effect of reducing the refrigerant temperature on the capacity of the compressor.

Common Manifold

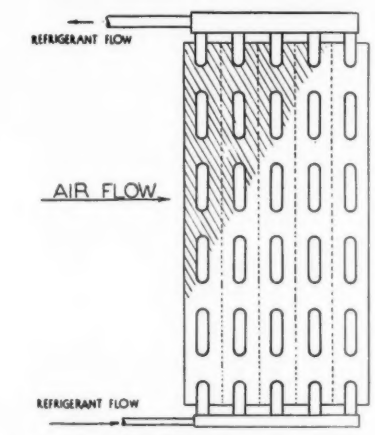


Fig. 3 shows the common method of manifolding with a straight manifold on top and bottom.

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Mills Condensing Units
By Mills Novelty Company
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★ ★ ★ FOR YOUR Defense JOBS
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DIAPHRAGM PACKLESS VALVES
Entire internal assembly removable for soldering or inspection. Equipped with famous pressure cup below diephragm. Two and three way. Flare sizes ¼" to ⅜"; Sweat sizes ¼" to ⅞".
PACKED AND PRESSURE CUP VALVES
Flare and sweat sizes ¼" to ⅝" (two and three way) have hex seal cap. Sweat sizes ¼" to 2⅛" (globe) have wing nut seal cap. Internal assembly (all sizes) removable for sweating to valve body.
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★ Refrigeration is Vitally Essential to Our National Defense Efforts ★
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Very sensitive springs. Less than 5 ounces pressure drop. Positively will not chatter or hum. All internal parts easily removable for sweating or inspection. Sizes ⅛" to ⅜" Flare; ¼" to ⅜" Sweat.
LIQUID INDICATORS
With or without seal cap. Flare sizes ¼" to ⅝"; Sweat sizes ¼" to 1⅛". On ½" Sweat to 1⅛" entire upper assembly may be removed as a unit to facilitate soldering of refrigerant lines to connections.
FOR FUTURE REFERENCE
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DEHYDRATORS
Silica-Gel or Activated Alumina. Refillable and non-refillable. ⅛" to ⅜"; ¼ to 5 H.P.; 2 to 60 cubic inches.
MANIFOLDS
With packless or seal cap valves. Two to six valves; ¼" to 2⅛" valves, with or without end fittings. Sweat or flare.
FILTERS
Highly efficient sack type filter. Sizes ¼" SAE to ⅝" SAE. One to five horsepower.
★ Don't take chances with the Nation's Health -- do the best job possible ★
FITTINGS
Unions, adapters, elbows, tees, crosses, caps, etc. ⅛" through 1".
HEAT EXCHANGERS
Unique design gives highest capacity per unit size. Sweat or flare connections. 4200 to 9725 BTU per hour.
Combination Heat Exchanger and Accumulator. From one to ten tons. Especially recommended for low temperature installations.
FLARE NUTS
Brass and steel. Long and frost proof. Forged and bar stock.
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U. S. GOVERNMENT
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Cafeteria Coolers
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Fulco ADJUSTABLE REFRIGERATOR COVERS
Fit any refrigerator. Excellent quality covering, well padded and reinforced at edges. Reduce loss from damage in transit to a minimum by full equipment with FULCO Adjustable Refrigerator Covers.
FULTON BAG & COTTON MILLS
Manufacturers since 1870
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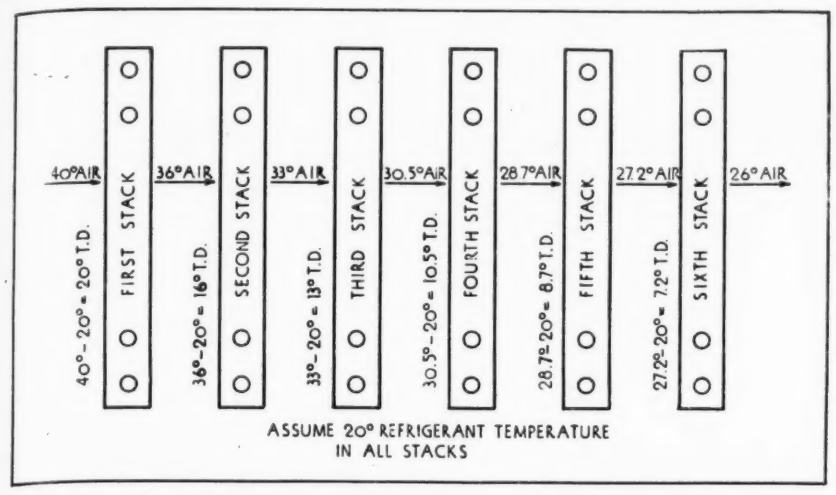
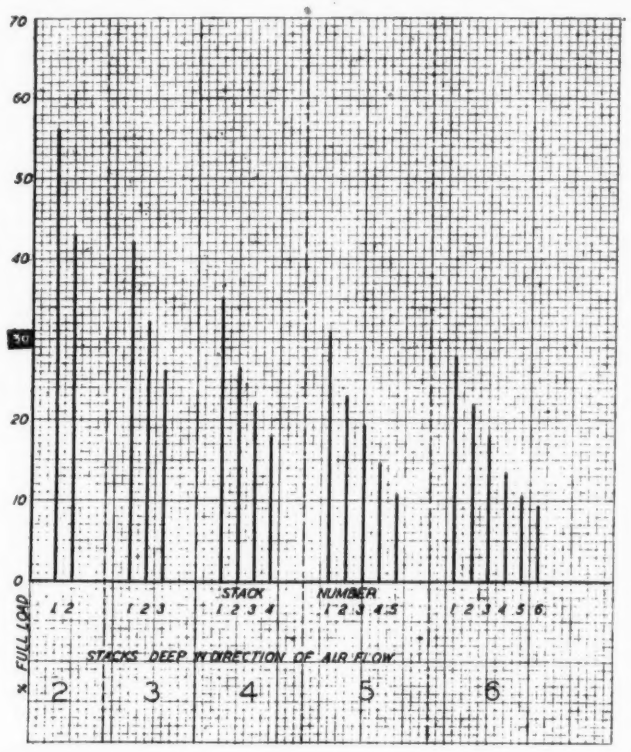
Fig. 4—Air Temperature of Stacks



This chart shows the temperature of the air entering each stack in a unit cooler. This accounts for unequal loading.

Fig. 5—Total Load Each Stack

This graph shows the percentage of the load each stack will do.



Many Problems Faced In Proper Manifolds For Unit Coolers

(Concluded from Page 16, Column 5)

the same and that all the refrigeration load is sensible.

The temperature of the air entering the first stack will be much higher than the air entering the last stack (Fig. 4). Thus the refrigerant load of each stack is unequal.

Fig. 5 shows the percentage of the total load each stack will do. While the percentages will vary with the type of surface and airflow, it indicates the large difference in the B.t.u. loads of various stacks.

When the coils of a unit cooler are manifolded so that each stack is a pass as illustrated in Fig. 3, the pressure drop through each stack must be equal, since the B.t.u. load of each stack is not equal, a portion of the coil will be starved thus reducing the efficiency of the coil.

To obtain equal loads for each refrigerant pass manifolding should be in the direction of airflow with identical physical construction as illustrated in Fig. 6.

With the manifolding as illustrated in Fig. 6 is used a distributor which is required to meter equal amounts of refrigerant to each pass. In recent years many attempts have been made to build a distributor that will work under all conditions. The physical condition of the refrigerant after leaving the expansion valve and the variation of load proved to be major difficulties.

However, at the present time there are a number of good distributors on the market that have proven themselves satisfactory in air conditioning application and applications where there is no ice on the coil.

Assuming that an ideal distributor is developed, i.e., one that divides equal amounts of refrigerant to each pass at all times and conditions, the problem is not answered. The unit cooler is usually operated at refrigerant temperatures low enough to cause icing of the coil during the on cycle. This ice on the fin introduces an additional difficulty to manifolding.

To illustrate, assume an idea distributor used on a four pass coil, each pass being equal in length and identical in construction, and design to absorb equal B.t.u. loads; each pass will receive and evaporate an equal amount of refrigerant.

Suppose one of the passes does not defrost during the defrost cycle and remains partly iced up. The heat transfer capacity of the iced-up pass will drop due to the insulation effect of the ice. The distributor will continue to deliver equal amounts of refrigerant to each pass.

The ice-free pass will evaporate all of its refrigerant; but the iced-up pass will not evaporate all its refrigerant, thus a portion of the liquid refrigerant will reach the suction line and will evaporate at that point. The evaporating refrigerant in the suction line will reduce the temperature at the feeler bulb causing the thermostatic expansion valve to throttle, thus cutting down the rate of refrigerant and starving the coil.

From the above example it can be seen that the expansion valve will adjust its rate of flow according to the evaporating capacity of the iced-up pass. The iced-up pass (the least productive pass) thus becomes the controlling pass in the flooding of the coil. This naturally leads to the starving of the ice-free passes of the coil and results in an overall reduction of refrigerating capacity of the coil.

The most logical solution to the problem of manifolding would be to use a single pass coil but this would mean using a number of tube diameters for various capacities which does not fall in line with the production of most manufacturers.

The other logical solution would be to use one expansion valve for each pass; this would prove objectionable due to the extra cost of the expansion valves and the cumbersome installation.

Another Type

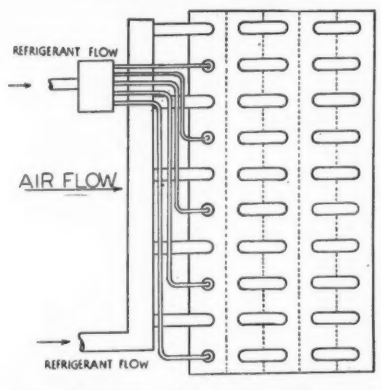


Fig. 6 shows the manifolding of a unit cooler through the use of a refrigerant distributor.

Locker Plant Growth In Wyoming Is Reported

CASPER, Wyo.—The Indian Ice Co., of which H. E. Parsons is manager, has started erection of a cold storage room at the plant to house 400 refrigerated lockers.

MUELLER BRASS CO.

Improved HEAT EXCHANGER

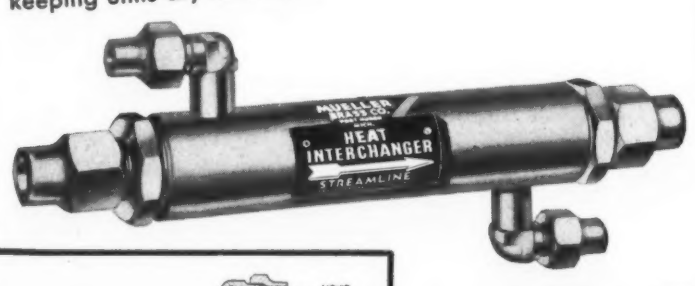
Compact and Efficient For Ice Cream Cabinet Installation

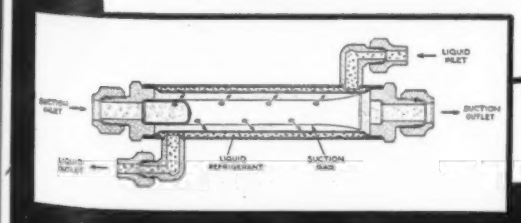
● The Heat Exchanger illustrated below is an addition to our line and intended for use in ice cream cabinet work and in similar installations where a small, compact, yet very efficient heat exchanger is required. Note that overall length is only 8¼".

It is designed to provide maximum heat exchanging capacity where available space is at a premium. Special combinations of inlet and outlet fittings can be furnished so that this compact unit can be adapted to your particular requirements.

Catalog No.	Suction Line	Liquid Line	Overall Length	Heat Transfer Area
A-13730	½" Flare	¼" Flare	8¼"	18 Sq. In.

Flare Nuts and Seals are furnished with Exchanger, thus keeping units dry and clean.





MUELLER BRASS CO.
PORT HURON, MICH.

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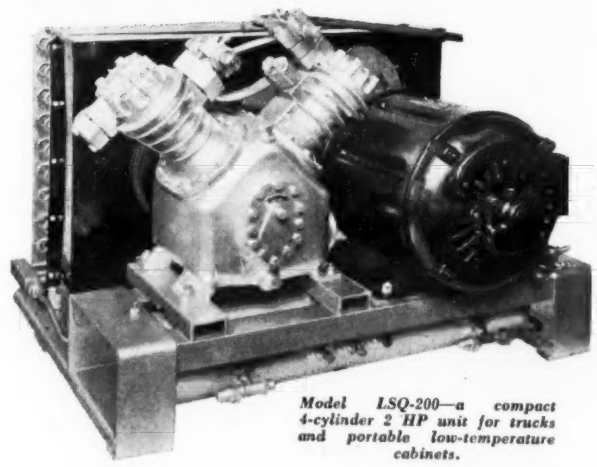

Model LSQ-200—a compact 4-cylinder 2 HP unit for trucks and portable low-temperature cabinets.

PERISHABLE foods and frozen products require constant, dependable refrigeration—whether they are being held in cold storage warehouses or transported from point to point.

Shifting populations—military and civilian alike—rely on flexible, mobile refrigeration equipment to preserve these essential products.

Servel is prepared to furnish refrigerating units especially designed for the severe service conditions of refrigerated trucks and other portable refrigerators. Units are available with electric motors, gasoline engines, or a combination of both.

For engineering advice and estimates, write today to Servel, Inc., Electric Refrigeration & Air Conditioning Division, Evansville, Indiana.

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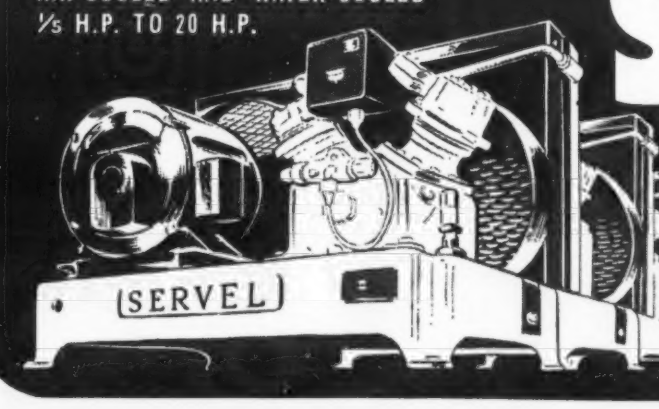
OVER 80 STANDARD MODELS—
AIR-COOLED AND WATER-COOLED
⅕ H.P. TO 20 H.P.



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Self-Contained HEAVY-DUTY **QUICK-FREEZER**

FOR FREEZING AND STORING FOODS ON THE FARM—IN THE HOME

NO CLOSED SEASON ON FRESHNESS • • • EVERY HOME CAN OWN A WILSON

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- Larger sizes for remote installation up to 80 cu. ft.
- Complete with all refrigeration, test-operated, ready to run
- Fast dual-action freezing
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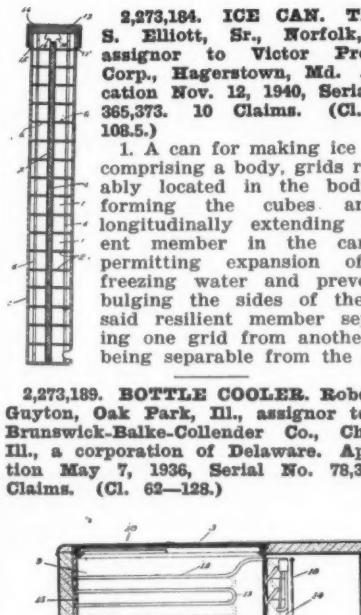

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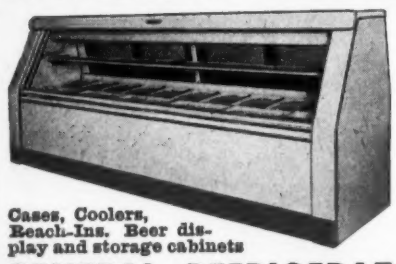

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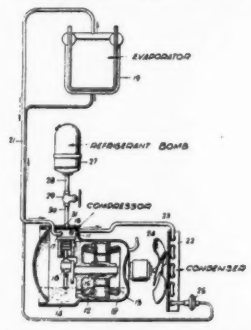
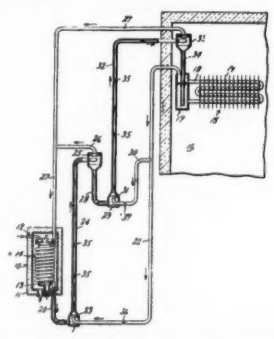
storage compartment having a portion of the expansion coil extending thereinto.

2,273,213. METHOD OF CHARGING REFRIGERATING SYSTEMS. Graham S. McCloy, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application May 16, 1940, Serial No. 335,441. 8 Claims. (Cl. 62—170.)



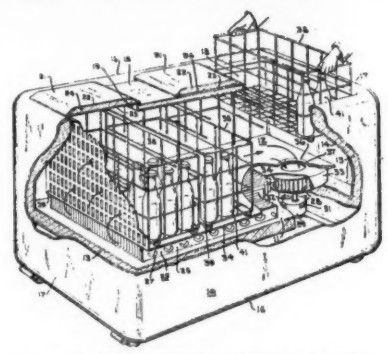
1. The method of charging a refrigerating system including an evaporator, a compressor, a condenser and an expansion device, with refrigerant and lubricant and removing non-condensable gases from said system, which method comprises connecting to the system a container containing refrigerant and lubricant for charging the system, transferring refrigerant and lubricant from the container to the system, transferring non-condensable gases from the system to the container by operating the compressor to effect flow of a mixture of non-condensable gases and refrigerant vapor into the container, condensing refrigerant vapor in the container and returning the refrigerant condensed in the container to the system.

2,273,226. REFRIGERATION. Bennet Carroll Shipman, deceased, late of Arlington County, Va., by Clara Wood Shipman, executrix, Birmingham, Ala., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application July 9, 1938, Serial No. 218,485. 13 Claims. (Cl. 62—125.)



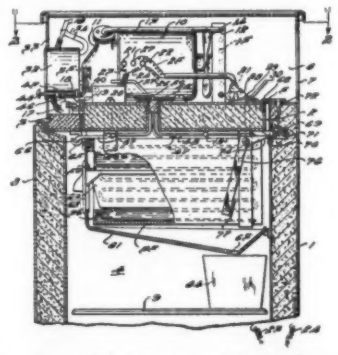
1. In a heat transfer system including a closed fluid circuit partly filled with a volatile liquid and having an evaporation portion at a first elevation and a condensation portion at a lower elevation, structure utilizing vapor produced in said evaporation portion to lift liquid in a plurality of stages between said elevations.

2,273,233. BOTTLE COOLER. Elo C. Tanner, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Aug. 24, 1938, Serial No. 226,425. 5 Claims. (Cl. 62—102.)



1. In a bottle cooler, the combination of an insulated chamber having two spaced apart openings in its top, closure members for said openings, a horizontal partition in said chamber, a cooling unit below said partition, a fan for circulating air over said cooling unit and around said partition, the direction of air flow above the partition being from one of said openings to the other, a plurality of foraminated baskets supported on said partition, and readily movable thereon, said baskets being shaped for removal and insertion through said openings, said baskets further having a sectional area closely fitting the interior of said chamber above said partition at right angles to the flow of air above said partition, whereby the air circulated by said fan is forced through the foraminations of said baskets to rapidly cool the contents thereof.

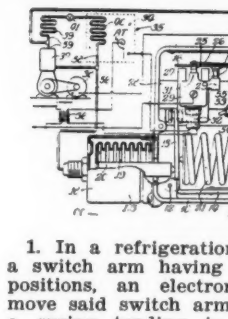
2,273,282. REFRIGERATOR. Glenn Muffly, Springfield, Ohio. Original application May 26, 1930, Serial No. 455,741. Divided and this application Oct. 7, 1938, Serial No. 233,820. 30 Claims. (Cl. 62—116.)



1. A refrigerator cabinet having a refrigerated spaced, a refrigerating system including a pivotally mounted insulating support in said cabinet having heat absorbing means on one side and heat dissipating means on the other side, and means normally holding the system in a horizontal operative position with said heat absorbing means located in said refrigerated space and said heat dissipating means outside of said refrigerated space.

2,273,306. THERMOSTATICALLY CONTROLLED UNIT. John E. Woods, Brookline, Mass., assignor to Clifford Mfg. Co., Boston, Mass., a corporation of Delaware. Application Jan. 30, 1940, Serial No. 316,406. 1 Claim. (Cl. 297—8.)

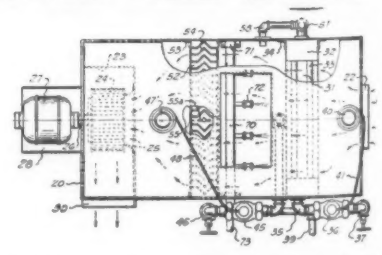
A thermostatic unit comprising a bellows cup closed at opposite end walls, one of said end walls being a plane surface and having a centrally disposed aperture therein, a supporting head forming a ring of contact with the plane surface of said end wall, said ring of contact surrounding and being concentric with said aperture, the portion of said supporting head inside said ring of contact extending inwardly and away from said end walls and terminating in an opening spaced a substantial distance from and larger than said aperture, a capillary tube passing through said opening and extending into said aperture in closely fitted relation thereto, and solder compound surrounding said capillary tube and filling the space formed by said end wall and said inwardly extending portion of said supporting head whereby said supporting head is bonded to said end wall over a substantial area while said capillary tube is supported relative to said supporting head and said aperture is sealed around said capillary tube.



2,273,343. REFRIGERATION CONTROL STRUCTURE. Robert J. Bigelow, Rochester, Minn., assignor to Penn Electric Switch Co., Goshen, Ind., a corporation of Iowa. Application June 10, 1940, Serial No. 339,747. 15 Claims. (Cl. 62—4.)

1. In a refrigeration control structure, a switch arm having cut-in and cut-out positions, an electromagnet tending to move said switch arm to cut-in position, a spring tending to move said switch arm to cut-out position, said electromagnet being capable of moving said switch arm to cut-in position against the action of said spring upon the switch arm being moved from cut-out position to a predetermined intermediate position, said spring being capable of moving said switch arm to cut-out position against the action of said electromagnet upon said switch arm being moved from cut-in position to said predetermined intermediate position, switch contacts controlled by said switch arm and connected in circuit with a refrigerant compressor motor, means responsive to low side pressure of the refrigerant system and operable to move said switch arm to said predetermined position upon rise of the low side pressure past a degree which permits defrosting of the evaporator coil of the refrigerant system before said predetermined intermediate position of said switch arm is reached, an air thermostat responsive to the temperature of air in the space being refrigerated and controlling said electromagnet, a stop for said low side pressure responsive means in a position incapable of moving said switch arm to cut-in position and said low pressure responsive means being movable in response to extreme low pressure to a position effecting opening of said switch arm while said electromagnet is energized.

2,273,357. AIR CONDITIONING APPARATUS. Louis D. Houlis, Cincinnati, Ohio. Application April 15, 1939, Serial No. 267,988. 4 Claims. (Cl. 236—44.)



1. An air conditioning apparatus including, an elongate casing having an inlet at one end and outlet at its opposite end, means for circulating air longitudinally through the casing, a heater extending transversely of the casing for heating the air passing therethrough, a thermostat having a dry bulb disposed between the heater and inlet directly in the path of the incoming air for controlling the operation of the heater to maintain the circulating air at a desired temperature, a steam spray means within the casing beyond the heater for introducing steam into the air circulating through the casing to control the humidity thereof, a thermostat having a wet bulb element mounted in the casing beyond the spray means for controlling the admission of steam in accordance with the humidity of the circulating air, and means for directing an uninterrupted stream of moisture-laden air onto the element of the wet bulb thermostat to maintain the same in a moistened condition without covering the exterior surface thereof.

2,273,375. THERMOSTAT. William A. Ray, Glendale, Calif. Application Feb. 24, 1939, Serial No. 258,253. 4 Claims. (Cl. 297—3.)

1. In a thermostat: a member made from heat insulating material and adapted to be supported by the aid of a wall;

(Continued on Page 19, Column 1)

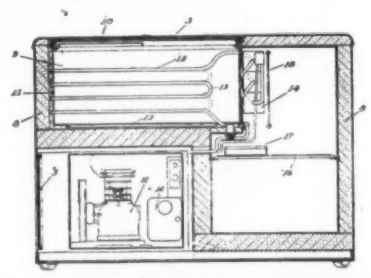
PATENTS

Weeks of Feb. 17 & 24

2,273,184. ICE CAN. Thomas S. Elliott, Sr., Norfolk, Va., assignor to Victor Products Corp., Hagerstown, Md. Application Nov. 12, 1940, Serial No. 365,373. 10 Claims. (Cl. 62—108.5.)

1. A can for making ice cubes comprising a body, grids removably located in the body for forming the cubes and a longitudinally extending resilient member in the can for permitting expansion of the freezing water and preventing bulging the sides of the can, said resilient member separating one grid from another and being separable from the grids.

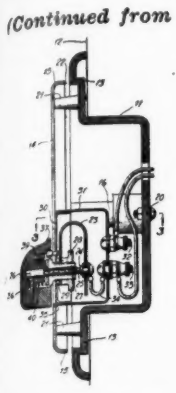
2,273,189. BOTTLE COOLER. Robert H. Guyton, Oak Park, Ill., assignor to The Brunswick-Balke-Collender Co., Chicago, Ill., a corporation of Delaware. Application May 7, 1936, Serial No. 78,332. 8 Claims. (Cl. 62—128.)



4. A cooler having in combination a case provided with upper closures, an open-top metal tank disposed within the case towards the upper end thereof, a refrigerating unit expansion coil surrounding the tank and embracing its walls to effect efficient thermal contact between the coil and said tank walls, an insulating material surrounding the coils and contacting the tank walls over areas in addition to those contacted by the expansion coil, and a dry storage compartment also within the case, said dry

Patents (Cont.)

(Continued from Page 18, Column 5)



a plate overlying said member and made from material having good heat conducting properties; a condition controlling temperature responsive element supported by said plate and between the member and the plate; said plate having an edge inwardly directed toward said member and spaced therefrom, the space between the edge and the member forming a continuous opening clear around said edge; and means forming small contact areas spaced inwardly from said edge for maintaining said plate in said spaced relation; said plate and said member forming a casing for the accommodation of the temperature responsive element; the space between the edge of the plate and the member being small so that the parts beneath the plate are not readily visible, and serving to cause the inner surface of the plate to be in direct communication with the atmosphere.

2,273,381. CONTROL SWITCH. Burton E. Shaw, Bristol, Ind., assignor to Penn Electric Switch Co., Goshen, Ind., a corporation of Iowa. Application Nov. 4, 1940, Serial No. 364,269. 16 Claims. (Cl. 200—139.)

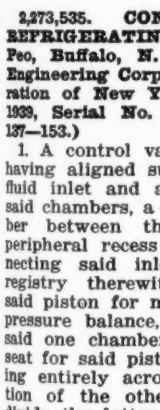
1. In a control switch, a base member of insulating material having a recessed portion in its lower surface, a pair of base plates secured to the bottom of said member, one of said base plates having a depressed portion entering said recess to form a temperature responsive element housing in conjunction with the other base plate, a range adjusting shaft extending centrally downward through said base member and into such housing, a temperature responsive element mounted on said shaft within such housing, means for securing said other base plate to the surface of a pipe or the like to receive heat therefrom by conduction and to transfer such heat by conduction through said plates and by conduction and radiation to said temperature responsive element, a switch on said base member having an actuating element extending into such housing, an operative connection between said temperature responsive element and said actuating element, a cover of insulating material for said switch, said cover being mounted on said base member, said cover having an indicating dial thereon and a knob on said adjusting shaft cooperating with said indicating dial.

2,273,535. CONTROL DEVICE FOR REFRIGERATING SYSTEMS. Ralph F. Peo, Buffalo, N. Y., assignor to Houde Engineering Corp., Buffalo, N. Y., a corporation of New York. Application May 8, 1939, Serial No. 272,302. 2 Claims. (Cl. 137—153.)

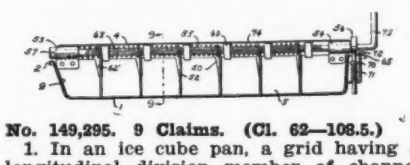
1. A control valve comprising a casing having aligned superimposed chambers, a fluid inlet and a fluid outlet in one of said chambers, a piston in said one chamber between the inlet and outlet, a peripheral recess in said piston for connecting said inlet and outlet when in registry therewith, an axial recess in said piston for maintaining the piston in pressure balance, a screw in the end of said one chamber defining an adjustable seat for said piston, a diaphragm extending entirely across an intermediate portion of the other of said chambers to divide the latter into two compartments, a piston rod connecting said diaphragm and piston, a spring in one of said compartments abutting said diaphragm on the side opposite its connection to said piston, threaded means in said one compartment for adjusting the pressure of said spring, a screw in said threaded means for limiting movement of said diaphragm in one direction, and means for transmitting fluid under pressure, other than from said inlet and outlet in the one chamber, into the other of said compartments and against said diaphragm in opposition to the pressure of said spring, said screws being adjustable for locking said piston in any position and for limiting its movement betweenn positions in which said peripheral recess is either in or out of registry with the inlet and outlet in said one chamber.

2,273,587. AIR CONDITIONER. James E. Myers, Milwaukee, Wis., assignor of one-half to William F. Simonsen, Milwaukee, Wis. Application Oct. 26, 1940, Serial No. 362,984. 5 Claims. (Cl. 98—109.)

1. In combination with an air distribution box having a lower air inlet opening and an upper laterally directed air outlet opening, a flat airpervious member having its upper end pivotally suspended in the upper portion of said box while its lower end is swingably adjustable across said inlet opening toward and away from said outlet opening, means for delivering a film of liquid across said member, and means for adjusting the angularity of said member relative to said outlet opening so as to vary the quantity of air passing therethrough from said inlet to said outlet openings while maintaining the total effective area of said inlet opening constant.

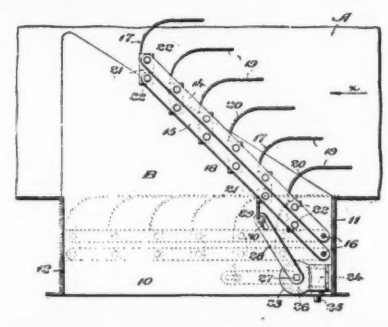


2,273,745. ICE CUBE RELEASE. Chancey B. Westra, Houston, Tex., assignor, by mesne assignments to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application June 21, 1937, Serial No. 149,295. 9 Claims. (Cl. 62—108.5.)



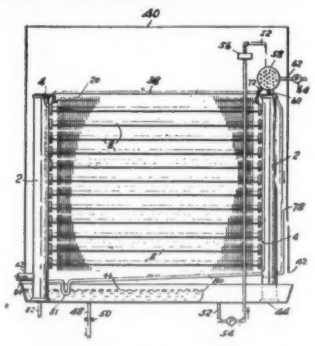
1. In an ice cube pan, a grid having a longitudinal division member of channel shape having recesses therein, transverse web members swingably supported in said recesses, each of said web members having a tongue portion extending downwardly into said channeled division member, a rod movably mounted within said division member and having shoulders thereon adapted to sequentially engage said tongue portions and swing the web members, and manually operable means extending into the channel of said division member for moving said rod to engage the web members.

2,273,818. AIR FLOW CONTROL DEVICE. Joseph Louis Childers and Albert Edward Parker, Dallas, Tex. Application April 24, 1939, Serial No. 269,706. 1 Claim. (Cl. 98—40.)



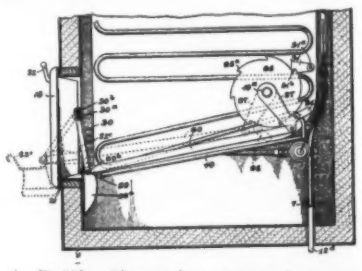
Means for deflecting fluid from a supply duct into a branch duct extending from said supply duct at substantially right angles thereto, said means comprising a self-contained unit including a casing corresponding in cross sectional size and shape to the branch duct to be slipped into the branch duct and fastened therein, said unit further including a plurality of blades having first and second end portions disposed at substantially right angles to each other, the first end portions of said blades being disposed substantially parallel to each other and also substantially parallel to the supply duct when said casing is disposed in the branch duct, the second end portions of said blades being disposed substantially parallel to each other and also substantially parallel to said casing, means mounting said blades in said casing for collective swinging movement between a position in which their first end portions are disposed substantially in alinement with each other transversely across said casing in closing relationship thereto and a position in which their first end portions are disposed in spaced, parallel relationship to each other within the supply duct. and their second end portions are alined with said casing when the casing is disposed in the branch duct, so that fluid flowing through the supply duct is deflected by said blades into the branch duct, said mounting means comprising parallel bars pivotally mounted upon said casing and to which said blades are pivoted at spaced points, and actuating means for swinging said bars to move said blades between their said two positions, said actuating means comprising a worm and a cooperating worm wheel mounted upon and within said casing, said worm having means engageable by a suitable implement to effect its rotation thereby to rotate the worm wheel, a longitudinally slotted arm fixed to the worm to be swung by rotation thereof, and a pin carried by one of said blades and extending through the slot in said arm so that swinging of said arm swings said blades.

2,274,034. EVAPORATIVE HEAT TRANSFER APPARATUS. Frank S. Broadhurst, Watertown, Mass. Application Sept. 26, 1936, Serial No. 102,666. 1 Claim. (Cl. 257—35.)



The combination with an evaporative condenser, of means for removing air and non-condensable vapor from said condenser, a second condenser receiving said air and non-condensable vapor, and means for conveying cooling water in heat exchange relation with said second condenser for cooling the same and for thereafter delivering the same onto the surfaces of the evaporative condenser.

2,274,065. BOTTLE COOLER. Robert Winter Hull and John Crawford Moore, Connersville, Ind., assignors, by mesne assignments, to Rex Mfg. Co., Inc., Connersville, Ind., a corporation of Indiana. Application April 20, 1939, Serial No. 269,046. 6 Claims. (Cl. 312—36.)



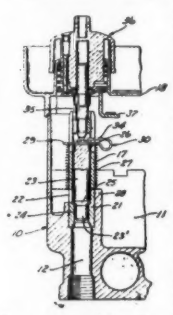
1. Bottle dispensing apparatus comprising a cabinet having a door opening and a refrigerated bottle storage compartment or chamber therein, deflector walls in said chamber arranged in opposed converging relation to cause the bottles to roll by gravity to a common hopper-like passage, a gravity runway having its receiving end communicating with said passage and its discharge end terminating adjacent the door opening, a door for said opening having means on the inner face thereof adapted to receive a bottle from said runway and carry it outwardly with the door when the door is opened, means operatively connecting said door with said wheel whereby each time the door is opened and closed said wheel is given a step-by-step rotary movement, and a separate storage compartment in said bottle storage compartment, the top wall of said latter storage compartment comprising one of said first-named deflectors and the bottom wall of said latter compartment overlying said runway.

2,274,125. REFRIGERATOR SHELF. Clifford R. Carney, Detroit, Mich. Application April 25, 1940, Serial No. 331,497. 1 Claim. (Cl. 211—153.)

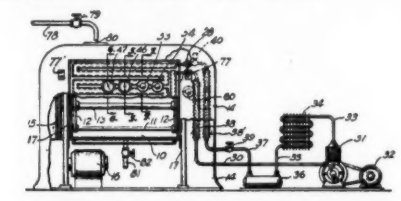
An article of manufacture comprising spaced substantially parallel retaining rails formed from a relatively hard metal, said rails each having a plurality of longitudinally extending equidistantly spaced openings formed therein, and a plurality of substantially equidistantly spaced cross members formed from a relatively softer metal having their opposite end portions located within said openings and mechanically united to said rails for interconnecting the rails, the initial diameter of said end portions being somewhat greater than that of said openings prior to the mechanical uniting of the parts.

2,274,145. TEMPERATURE COMPENSATING METERING VALVE. Roy W. Johnson, Milwaukee, Wis. Application July 22, 1940, Serial No. 346,751. 5 Claims. (Cl. 137—21.)

3. A control device of the character described comprising a casing having a liquid supply chamber provided with an outlet, a metering valve for regulating flow through said outlet, means for biasing said valve to open position, a horizontally disposed U-shaped bimetallic element having its lower leg secured to the upper end of the valve, and an operator for the valve coacting with the upper leg of said U-shaped bimetallic element, said operator being movable to close said valve against force of said biasing means.

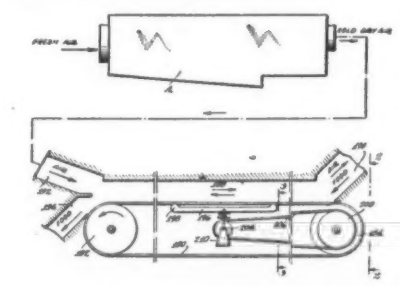


2,274,220. REFRIGERATED DOUGH MIXER. Merlin A. Sticelber, Kansas City, Mo. Application Nov. 8, 1940, Serial No. 364,903. 19 Claims. (Cl. 62—1.)



1. In a dough mixer, a mixing chamber having a wall, agitating means in said chamber periodically engaging dough being mixed in said chamber with said wall, and refrigerating means for said wall, comprising a refrigerant expansion chamber in direct heat transfer relation to said wall, said expansion chamber comprising a plurality of adjacent parallel channel members of substantially U-shaped section, connected alternately at opposite ends thereof in series to form a continuous circuitous conduit along said wall.

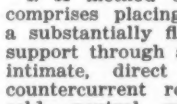
2,274,292. REFRIGERATING SYSTEM. Nicolai H. Hiller, Jr., Bronxville, N. Y., assignor, by mesne assignments, to The Texas Co., New York, N. Y., a corporation of Delaware. Original application Aug. 26, 1937, Serial No. 160,942. Divided and this application March 1, 1938, Serial No. 193,227. 4 Claims. (Cl. 62—104.)



4. A method of freezing foods which comprises placing said foods loosely on a substantially flat support, moving said support through an elongated chamber in intimate, direct contact with and in countercurrent relation to a stream of cold, neutral gas, and simultaneously therewith shaking said support in a vertical direction to agitate said foods and provide uniform freezing thereof.

2,274,312. THERMOSTATIC SWITCH. Calvin J. Werner, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Jan. 21, 1941, Serial No. 375,188. 6 Claims. (Cl. 200—83.)

1. A temperature responsive switch controlling mechanism comprising, means actuated in response to temperature changes, a toggle comprising two arms, one pivotally supporting the other, said one arm engaging said means and having a finger for operating the switch, a tension spring connected between the arms and exerting a component of its force to urge the one arm toward and against the said means, and a manually operable member engaged by the other toggle arm, and adapted, when moved through a portion of its range of travel, to adjust said other arm gradually to shift the line of action of the spring and thereby correspondingly vary the component of the spring force upon said one toggle arm, said member, when moved through another portion of its range of travel being adopted to adjust said other toggle arm so that the component of the spring force will move said one arm to render the temperature responsive means completely inoperative and to open the switch with a snap action.



(To Be Concluded)

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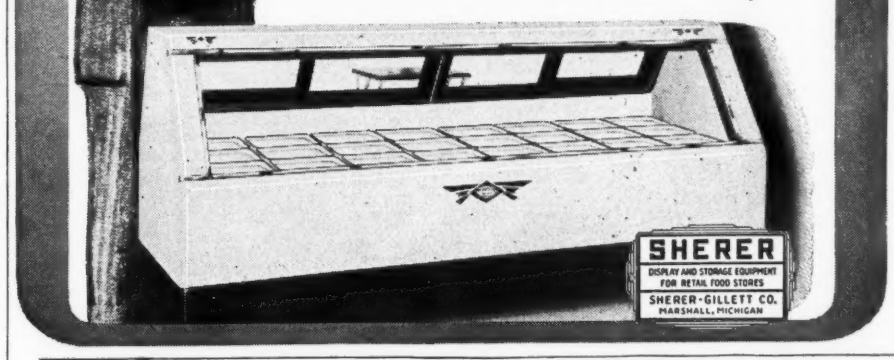

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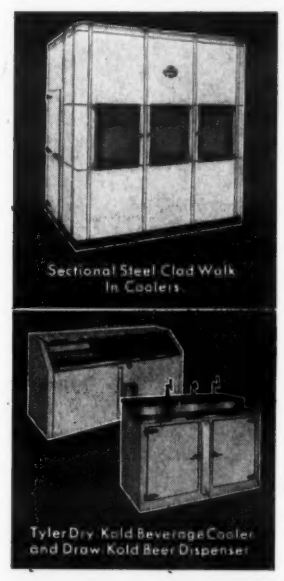

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Bogardus Outlines Reasons For Price Control & Suggests Some 'Dont's' For Dealers

PITTSBURGH—Methods of price control and common-sense practices to help retail dealers weather today's critical business conditions were outlined to 300 retail appliance executives by Dr. James F. Bogardus of the Office of Price Administration at the special "dealer-stay-in-business" Mart held here recently.

"It is going to be hard for dealers to stay in business," declared Dr. Bogardus. "In fact, the rapid changeover to defense production will mean that many businesses will close down. Naturally the OPA will attempt to keep casualties as low as possible. To wholesalers the changing situation will mean the disappearance of many products and the curtailment of the volume of goods sold."

The speaker believed that if we can preserve our economic system, whatever sacrifices we make will be more than compensated. To maintain better our economic balance and prevent inflation, which benefits the few at the expense of the many and leads to depression, we need a carefully worked-out program.

"Consider the conditions requiring this program," Dr. Bogardus said. "In 1940 our national income was $76,000,000,000. In 1941 it was from 92 to 95 billion dollars. This year it will be above $100,000,000,000. This means an increase in consumer purchasing power, and, while the national income is rising, our production capacity in consumer goods is being decreased because we are devoting more capacities to definite needs of national defense.

"Our capacity devoted to these defense capacities will be increased to 50% this year. If these conditions continue, a rapid rise in prices is inevitable. During the First World War the price level increased 100%."

Dr. Bogardus explained three ways of dealing with this price-level situation.

First, we may let the forces in operation continue without restriction. The result will be inflation, the reduction of fixed income, and subsequent economic maladjustment leading to depression. If prices continue to rise at the same rate as in 1941, inflation will cost the typical buyer 50 to 75 billion dollars more than if inflation is checked.

As an alternative, he continued, we may tax away this purchasing power so that inflation is checked. This method is being used today, but not to the extent of offsetting the shortage in the amount of consumer goods available.

The third way of checking inflation is by direct price control, with rationing where necessary. President Roosevelt has done this. The OPA has done effective work, has retarded the price advances, has operated without any legislative authority.

"A definite program is necessary to fix price ceilings on raw materials and to freeze prices at manufacturer's levels," Dr. Bogardus advised the group.

The appliance executives were told that a study of distributive costs reveals two methods of achieving these ends. First, price ceilings by which one designates an arbitrary price at which commodities may be sold over the country. Secondly, price fixing as of a certain date.

"This general problem and method of dealing with price control relates to the future of both wholesalers and retailers in the house furnishings industry. It is difficult at the present time to make any predictions with respect to the quantity of merchandise to be available," Dr. Bogardus explained.

There is a scarcity, he said, of two general types of commodities: (1) commodities made for military uses, (2) made of raw materials. Under (2) comes refrigerators, washing machines, stoves, ranges.

"Because of the scarcity of shipping, materials will become very scarce, affecting such things as carpeting and mattress springs," he predicted. "Wood furniture, however, is one of the most favorably located fields, having the largest of all consumer goods. It doesn't compete with defense needs."

Dr. Bogardus suggested three definite practices that appliance dealers should follow: (1) Don't expect to maintain complete inventories. Be reasonable. The OPA objects to industries hoarding, so don't do it in the retail field. (2) Keep away from "scarcity advertising." (3) Keep prices down and keep them reasonable. Retail trade today is not handicapped, but it has many restrictions. If retailers keep prices in line and profits reasonable, the OPA has no desire to impose retail ceilings.

Text of New Repair Parts Amendment

(Concluded from Page 1, Column 5)

possessions, using tools or equipment to repair or maintain agricultural machinery, refrigerating equipment located in stores or restaurants, or the property of any Producer as defined in (b) (1) (i) and (ii).

(b) Section 958.2 (Paragraph (b) (5) (i) of Preference Rating Order P-100) is hereby amended to read as follows:

"(i) Any Material which is physically incorporated, in whole or in part, into any Material which the Producer manufactures, distributes, sells, stores, or transports, excepting Material used by Producer to repair or maintain refrigerating equipment located in stores or restaurants, agricultural machinery, or the property of another Producer, or"

(c) This amendment shall take effect immediately.

Issued this 9th day of March, 1942.

Radio Production For Civilians To End Soon

(Concluded from Page 1, Column 4)

War equipment to be produced by the radio industry will include airplane detection equipment, to detect approaching enemy aircraft, and transmitting and receiving equipment to enable our armed forces—on land, on sea, or in the air—to communicate with each other.

Production of home radios was originally curtailed in an order issued in January which provided that between Jan. 23 and April 23 the large manufacturers were limited to 55% of their rate of production in the first nine months of 1941, and small manufacturers were limited to 65%. It is expected that under the terms of that order approximately 3,000,000 radios will be built this year before the cutoff goes into effect.

Robert Berner, chief of the Radio Section of the War Production Board, said that the conversion will not result in unemployment for any appreciable period; in fact, employment in the radio industry will greatly increase after the switch has been made from civilian to military production. It is expected that more than 95% of the conversion will be completed before June 30 of this year.

The Ordnance Branch and the Radio Section of Consumers' Durable Goods Branch of WPB, to facilitate the conversion of the smaller companies, have worked out a sub-contracting plan whereby each of the 55 companies affected by the order who is not himself a prime contractor will be assigned to a prime contractor, thus forming a series of military production "family groups." The load of producing war radio equipment will be so evenly divided that there will be work for every company, either as a prime contractor or a sub-contractor, which is capable of performing the precise operations demanded by the military. All but 13 of the 55 companies affected by the order already have military contracts of some kind.

The provision in the order for the continued manufacture of replacement parts will enable the bulk of the existing home radios to be kept in efficient operating condition during the war, the WPB declared.

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SERVICE and Installation men for commercial work in Cleveland territory, weekly or hourly rates. Box 1391, Air Conditioning & Refrigeration News.

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MODEL No. 25, 5 gallon cabinet type Mills Freezer, equipped with high temperature storage compartment. 3, 60-gallon Mills Hardening Cabinets. Miscellaneous —various make Ice Cream Cabinets. 1, 5 H.P. Universal 4 cylinder Water Cooled Compressor. 1, 2 H.P. Zerozone 2 cylinder Water Cooled Compressor. 2, 1½ H. P. water cooled, 4 cylinder Par Units (two months in service—practically new). 9, York 2 cylinder 1 H.P. water cooled compressors (practically new). Also a few Servels, Frigidaires, brand new knockdown hardening cabinets. Other equipment too numerous to mention. What do you need? On sale for client, Attorney Charles A. Pincus, 142 E. 32nd Street, New York, N. Y.

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Brand new Norge water cooled condensing units, 1 H. P. — Write

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NEWS

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New A-P

TR-AP-DRI

A SINGLE Unit that STOPS ALL IMPURITIES

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TRAP-DRI provides 100% protection for your system. Permits smooth valve operation, prevents freeze-ups . . . Installed ahead of the Expansion Valve, it "cleans up" the system immediately and permanently by removing all gummy deposits, scale, dirt, solder particles, moisture and acids. Fittings with generous wrench grips provide easy and simple installation.

TR-AP-DRI
STOPS ALL IMPURITIES SUCH AS MOISTURE, GUMMY DEPOSITS, SCALE, DIRT AND SOLDER PARTICLES
Dryer Strainer Filter
AUTOMATIC PRODUCTS COMPANY

CROSS-SECTION OF NEW A-P TRAP-DRI . . .

1. "Trap-It" Element consisting of honeycomb filter tube of specially processed cotton yarn, equal to 900-mesh strainer.

2. Silica Gel unit, the most efficient of all drying agents.

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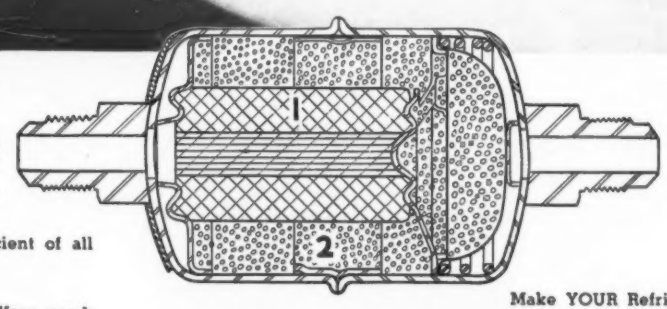

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There is no noticeable pressure drop in the "Trap-Dri"—an important advantage in any system.

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